Silesian University of Technology

PREDICTION OF THE MECHANICAL AND ELECTRICAL PROPERTIES OF CEMENTITIOUS COMPOSITES USING ARTIFICIAL NEURAL NETWORKS

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APPENDICES

Appendix A – ANSYS Numerical Simulations

A1. Materials

Table A1.1 Materials library for Material Designer models

Material	Density [kg/m^3]	Coefficient of thermal expansion [C^{-1}]	Young's modulus [GPa]	Poisson's ratio	Tensile ultimate strength [MPa]	Compressive ultimate strength [MPa]	Isotropic thermal conductivity [Wm^{-1}C^{-1}]	Specific heat constant pressure [Jkg^{-1}C^{-1}]	Isotropic electrical resistivity [Ωcm]
OPC 42.5	2300	1.40E-05	30	0.18	5	42.5	0.72	780	8.0E+06
OPC 52.5	2300	1.40E-05	30	0.18	5	52.5	0.72	780	8.0E+06
CNT	1800	0.005483	635/6/6	0.2/0.4/0.2	55500	0.0002	4400	/	0.0001
CNF	1800	0.005483	230/2.3/2.3	0.2/0.4/0.2	6500	0.0002	448	/	0.001
cem42503	2300	1.40E-05	30	0.18	10.1	66.5	0.72	780	7.7E+06
cem425033	2300	1.40E-05	30	0.18	4	84.8	0.72	780	7.7E+06
cem42504	2300	1.40E-05	30	0.18	7.04	45.5	0.72	780	6.6E+06
cem42505	2300	1.40E-05	30	0.18	7.15	35.6	0.72	780	6.6E+06
cem52504	2300	1.40E-05	30	0.18	6	56.7	0.72	780	6.6E+06
mor425035033spl	2300	1.40E-05	30	0.18	10.3	72.1	0.72	780	1.00E+05
mor425040263spl	2300	1.40E-05	30	0.18	7.5	65	0.72	780	1.00E+05
mor425045033spl	2300	1.40E-05	30	0.18	8.9	56.4	0.72	780	1.00E+05
mor425045067spl	2300	1.40E-05	30	0.18	6.69	52.27	0.72	780	1.00E+05
mor42504850364	2300	1.40E-05	30	0.18	5.9	31.7	0.72	780	1.00E+05
mor42505033	2300	1.40E-05	30	0.18	8.3	51.3	0.72	780	1.00E+04
mor42505033spl	2300	1.40E-05	30	0.18	5.9	31.8	0.72	780	1.00E+04
mor425055033	2300	1.40E-05	30	0.18	7.6	48.8	0.72	780	1.00E+04
mor52505033spl	2300	1.40E-05	30	0.18	10.35	54	0.72	780	1.00E+04
con425051038049	2300	1.40E-05	30	0.18	6.7	45.8	0.72	780	1.00E+06

A2. Results

Table A2.1 Resulting material properties and strength of simulated samples

Material	Density [kg/m^3]	Young's modulus [GPa]	Poisson's ratio YZ direction	Shear modulus XY direction [GPa]	Compressive ultimate strength [MPa]	Tensile ultimate strength [MPa]
cem52504	2300	30	0.18	/	51.13	13.32
cem52504NT005	2283.4	46.898	0.2014	12.659	51.81	12.67
cem52504NT01	2266.4	69.277	0.21847	12.5	52.17	12.06
cem52504NT015	2249.8	86.57	0.22763	12.408	52.19	11.69
cem53504NT02	2233.2	105.72	0.22958	12.326	52.29	11.37
cem52504NT025	2216.3	127.15	0.25611	12.051	52.06	12.99
cem54504NT03	2199.5	139.8	0.24451	12.157	52.29	13.10
cem52504NT035	2183.5	170.93	0.2412	11.739	52.40	14.45
cem52504NT04	2166.5	191.52	0.24311	11.602	52.37	15.35
cem52504NT045	2150	211.4	0.24233	11.483	52.44	15.88
cem52504NT05	2133.5	231.44	0.2327	11.339	52.51	16.61
cem425033	2300	30	0.18	/	76.47	6.12
cem425033NT001	2296	34.755	0.1875	12.687	76.86	6.03
cem425033NT002	2292.5	38.734	0.19256	12.652	77.14	5.96
cem425033NT003	2288.5	43.415	0.1986	12.619	77.36	5.88
cem425033NT004	2285	47.15	0.2012	12.607	77.52	5.83
cem425033NT005	2280.9	51.086	0.20554	12.596	77.64	5.77
cem425033NT006	2277.4	56.006	0.20916	12.601	77.73	5.70
cem425033NT007	2273.1	58.794	0.21069	12.695	77.73	5.66
cem425033NT008	2269.8	62.84	0.21281	12.575	77.90	5.60
cem425033NT009	2266	69.834	0.22016	12.47	77.93	5.56
cem425033NT01	2262.3	72.756	0.22117	12.45	77.97	5.52
cem42505	2300	30	0.18	/	32.10	10.95
cem42505NT001	2296.5	34.108	0.18654	12.705	32.24	10.80
cem42505NT002	2293.5	37.642	0.19135	12.665	32.35	10.69
cem42505NT003	2289.9	39.6	0.19437	12.637	32.39	10.69
cem42505NT004	2286.5	46.188	0.20041	12.609	32.53	10.44
cem42505NT005	2283.5	49.448	0.20354	12.631	32.56	10.36
cem42505NT006	2279.9	52.988	0.20597	12.585	32.63	10.27
cem42505NT007	2276	57.439	0.21028	12.598	32.65	10.17
cem42505NT008	2273.4	60.504	0.21191	12.489	32.71	10.11
cem42505NT009	2269.9	64.408	0.21624	12.57	32.69	10.02
cem42505NT01	2266.2	63.656	0.21754	12.761	32.62	9.98
cem42504	2300	30	0.18	/	41.03	10.78
cem42504NT001	2296.5	34.164	0.18673	12.697	41.21	10.63
cem42504NT002	2293	37.711	0.19166	12.695	41.33	10.52
cem42504NT003	2289.5	42.076	0.19615	12.649	41.47	10.39
cem42504NT004	2285.5	45.828	0.20066	12.655	41.55	10.28
cem42504NT005	2281.9	50.065	0.20429	12.635	41.64	10.18
cem42504NT006	2278.4	52.12	0.2072	12.623	41.64	10.12
cem42504NT007	2275	56.626	0.21149	12.527	41.76	9.98

cem42504NT008	2271.4	63.25	0.21248	12.506	41.83	9.89
cem42504NT009	2267.9	64.01	0.21649	12.551	41.79	9.86
cem42504NT01	2264.4	68.749	0.22117	12.502	41.79	9.77
cem42503	2300	30	0.18	/	59.97	15.46
cem42503NT005	2283.5	49.418	0.20304	12.609	60.84	14.63
cem42503NT01	2266.4	69.027	0.21823	12.538	61.12	14.02
cem42503NT015	2249.7	81.188	0.2284	12.609	61.11	13.66
cem42503NT02	2233.2	100.39	0.23364	12.399	61.26	13.29
cem42503NT025	2215.6	121.6	0.23448	12.368	61.25	13.86
cem42503NT03	2199.2	132.77	0.24041	12.431	61.03	15.76
cem42503NT035	2182.8	159.43	0.27042	11.936	60.76	17.57
cem42503NT04	2166.2	184.42	0.27442	11.741	60.81	18.52
cem42503NT045	2149	178.96	0.28382	11.675	60.36	19.64
cem42503NT05	2131.8	188.25	0.28563	12.851	60.04	20.22
mor42504850364	2300	30	0.18	/	28.59	9.03
mor42504850364NT005	2294	37.12	0.19069	12.672	28.79	8.83
mor42504850364NT008	2290.5	40.907	0.19536	12.649	28.87	8.74
mor42504850364NT01	2288	44.364	0.19941	12.613	28.94	8.66
mor42504850364NT015	2282.3	48.591	0.20236	12.808	28.94	8.55
mor42504850364NT02	2276.4	55.918	0.21104	12.597	29.05	8.41
mor42504850364NT025	2270.4	65.009	0.21078	12.524	29.17	8.26
mor42504850364NT03	2264.4	68.574	0.21669	12.493	29.15	8.19
mor42504850364NT035	2258.1	75.726	0.21842	12.645	29.14	8.06
mor42504850364NT04	2252.7	83.29	0.22426	12.521	29.17	7.96
mor42504850364NT045	2246	82.758	0.22785	13.156	29.04	7.90
more42504850364NT05	2239.5	88.074	0.23075	13.354	29.03	7.81
mor42505033	2300	30	0.18	/	46.26	12.71
mor42505033NT0025	2297	33.205	0.1852	12.721	46.41	12.57
mor42505033NT005	2294.5	36.496	0.18983	12.671	46.57	12.45
mor42505033NT0075	2291.5	39.332	0.19373	12.708	46.65	12.34
mor42505033NT01	2288.9	42.171	0.19613	12.643	46.78	12.25
mor425055033	2300	30	0.18	/	44.01	11.63
mor425055033NT0025	2297	33.251	0.18528	12.739	44.18	11.50
mor425055033NT005	2294.5	36.426	0.18996	12.696	44.28	11.40
mor425055033NT0075	2291.5	39.931	0.19434	12.704	44.40	11.28
mor425055033NT01	2288.9	41.556	0.19637	12.636	44.49	11.20
mor42505033spl	2300	30	0.18	/	28.68	9.03
mor42505033splNT0025	2297	33.549	0.18578	12.687	28.79	8.93
mor42505033splNT005	2294.5	36.525	0.19002	12.668	28.87	8.85
mor42505033splNT0075	2291.5	40.024	0.19462	12.641	28.95	8.76
mor42505033splNT01	2289	42.309	0.19668	12.627	28.99	8.70
mor52505033spl	2300	30	0.18	/	48.70	15.84
mor52505033splNF005	2294.5	32.133	0.18614	12.67	48.78	15.70
mor525033splNF01	2289	34.25	0.19154	12.625	48.85	15.56
mor525033splNF015	2283.4	36.04	0.19613	12.592	48.89	15.44

mor525033splNF02	2277.9	38.16	0.198	12.523	48.98	15.30
mor52505033splNF025	2271.9	40.882	0.20251	12.501	49.02	15.13
mor525033splNF03	2266.2	41.959	0.20494	12.477	48.95	15.03
mor525033splNF035	2260.9	45.208	0.20994	12.396	49.11	14.89
mor525033splNF04	2255	46.562	0.20844	12.44	49.03	14.69
mor525033splNF045	2249.5	47.571	0.20862	12.286	49.10	14.61
mor52505033splNF05	2243.8	48.891	0.21418	12.301	49.04	14.56
mor525033splNF055	2237.5	48.391	0.21919	12.712	48.88	14.51
mor525033splNF06	2233.2	55.214	0.22837	12.19	49.11	14.31
mor525033splNF065	2227.8	58.136	0.23501	12.139	49.02	14.14
mor525033splNF07	2221.3	58.194	0.21891	12.272	49.09	13.93
mor52505033splNF075	2214.2	56.012	0.2299	12.028	48.99	14.06
mor525033splNF08	2210.3	63.188	0.23997	12.159	48.86	13.72
mor525033splNF085	2204.6	65.11	0.23161	12.107	48.64	13.68
mor525033splNF09	2191.6	47.79	0.22215	12.728	48.62	14.06
mor525033splNF095	2193.8	68.691	0.24497	11.994	49.09	13.59
mor52505033splNF1	2188.3	69.943	0.28297	12.006	48.47	13.70
mor525033splNF105	2181.8	67.334	0.24728	12.243	48.77	13.31
mor525033splNF11	2177.1	72.273	0.25817	11.764	48.60	14.39
mor525033splNF115	2171.2	74.709	0.28033	11.739	48.18	15.54
mor525033splNF12	2164.8	74.804	0.2462	12.031	48.84	14.21
mor52505033splNF125	2159.4	77.232	0.27412	11.559	48.27	15.82
mor525033splNF13	2154.6	82.917	0.25954	11.681	48.70	15.38
mor525033splNF135	2149.1	84.795	0.23499	11.569	49.13	14.94
mor525033splNF14	2144.3	90.497	0.22133	11.431	49.07	16.41
mor525033splNF145	2138.4	90.887	0.23923	11.471	48.93	16.35
mor52505033splNF15	2132.7	93.555	0.25613	11.472	48.48	17.60
mor525033splNF155	2126.9	90.794	0.28922	11.305	47.89	18.46
mor525033splNF16	2121.7	99.068	0.30026	11.284	47.67	19.85
mor525033splNF165	2115.5	97.566	0.28326	11.285	48.09	18.66
mor525033splNF17	2110	99.398	0.33264	11.402	47.83	20.43
mor52505033splNF175	2105.1	106.06	0.29754	11.196	47.53	21.03
mor525033splNF18	2098.9	102.64	0.29309	11.306	47.99	19.35
mor525033splNF185	2094.4	121.19	0.20014	11.044	49.70	17.09
mor525033splNF19	2089.1	114.39	0.19535	11.005	49.80	17.15
mor525033splNF195	2083.5	116.59	0.18489	10.956	49.92	17.35
mor52505033splNF2	2078	118.79	0.19042	10.922	49.86	17.56
mor425035033spl	2300	30	0.18	/	65.02	15.77
mor425035033splNT0025	2297	33.49	0.18559	12.71	65.26	15.59
mor425035033splNT005	2294.5	36.389	0.18974	12.697	65.43	15.45
mor425035033splNT0075	2291.4	39.144	0.19367	12.645	65.59	15.33
mor425035033splNT01	2289	43.027	0.19783	12.644	65.75	15.17
mor425045033spl	2300	30	0.18	/	50.86	13.62
mor425045033splNT0025	2297	33.582	0.18585	12.693	51.06	13.47
mor425045033splNT005	2294.5	36.318	0.18963	12.682	51.19	13.35

mor425045033splNT0075	2291.5	39.771	0.19399	12.662	51.30	13.22
mor425045033splNT01	2289	42.526	0.1969	12.632	51.42	13.12
mor425040263spl	2300	30	0.18	/	58.62	11.48
mor425040263splNT005	2295	35.972	0.18946	12.672	58.98	11.27
mor425040263splNT01	2226.2	39.568	0.19418	12.69	59.12	11.14
mor425040263splNT015	2285.5	47.211	0.20176	12.627	59.39	10.92
mor425040263splNT02	2280.5	52.965	0.20683	12.563	59.56	10.78
mor425040263splNT025	2275.9	57.318	0.20901	12.659	59.61	10.66
mor425040263splNT03	2271.3	59.63	0.21203	12.48	59.71	10.61
mor425040263splNT035	2266.4	67.894	0.21543	12.429	59.84	10.45
mor425040263splNT04	2261.2	71.044	0.21637	12.535	59.81	10.35
mor425040263splNT045	2256.9	79.463	0.22116	12.436	59.85	10.20
mor425040263splNT05	2251.6	80.873	0.22459	12.536	59.80	10.16
mor425045067spl	2300	30	0.18	/	47.14	10.24
mor425045067splNT005	2291.5	39.72	0.19425	12.647	47.58	9.94
mor425045067splNT01	2282.9	48.067	0.20207	12.635	47.80	9.72
mor425045067splNT015	2274.5	59.764	0.21199	12.553	47.98	9.47
mor425045067splNT02	2266	70.697	0.21908	12.433	48.09	9.26
mor425045067splNT025	2257.4	79.687	0.22307	12.496	48.12	9.11
mor425045067splNT03	2248.6	84.996	0.22647	12.41	48.14	9.01
mor425045067splNT035	2239.9	86.279	0.22504	12.416	48.12	8.96
mor425045067splNT04	2230.1	84.289	0.22864	13.386	47.78	8.84
mor425045067splNT045	2219	76.926	0.21766	12.78	48.04	8.93
mor425045067splNT05	2214.7	119.9	0.24438	12.526	47.88	9.82
con425051038049	2300	30	0.18	/	41.30	10.26
con425051038049NT0025	2298	32.336	0.18387	12.715	41.42	10.18
con425051038049NT005	2295.9	34.724	0.18752	12.705	41.50	10.10
con425051038049NT0075	2294	37.064	0.19062	12.679	41.59	10.03
con425051038049NT01	2292	38.996	0.19295	12.671	41.65	9.97
con425051038049NF0025	2298	30.756	0.18232	12.704	41.32	10.22
con425051038049NF005	2295.9	31.558	0.18438	12.684	41.36	10.19
con425051038049NF0075	2293.9	32.168	0.18606	12.687	41.37	10.16
con425051038049NF01	2292	32.967	0.18755	12.646	41.41	10.13

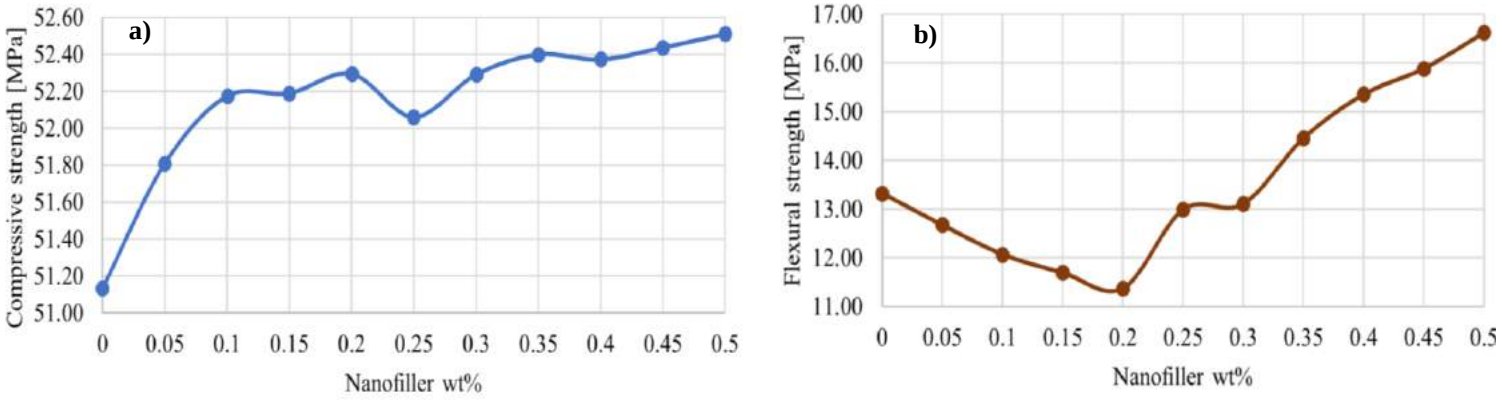

Figure A2.1 Change of compressive strength (a) and flexural strength (b) of material cem52504 with increase of nanofiller wt%

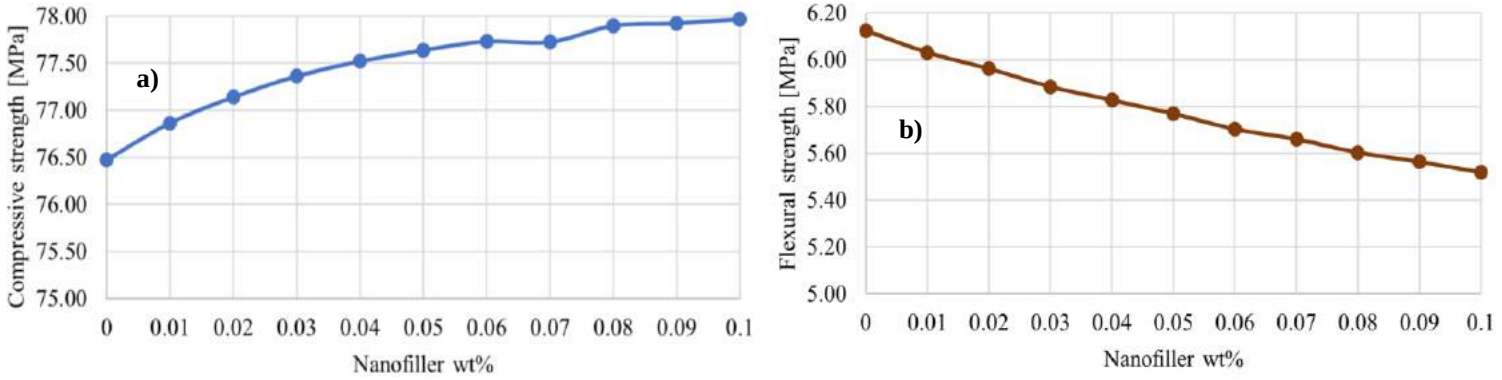

Figure A2.2 Change of compressive strength (a) and flexural strength (b) of material cem425033 with increase of nanofiller wt%

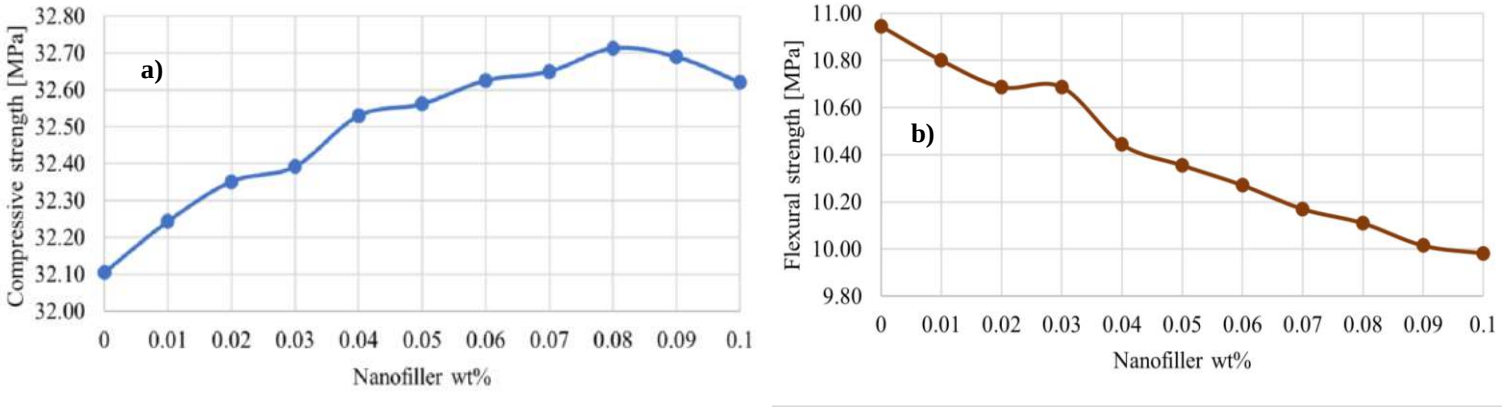

Figure A2.3 Change of compressive strength (a) and flexural strength (b) of material cem42505 with increase of nanofiller wt%

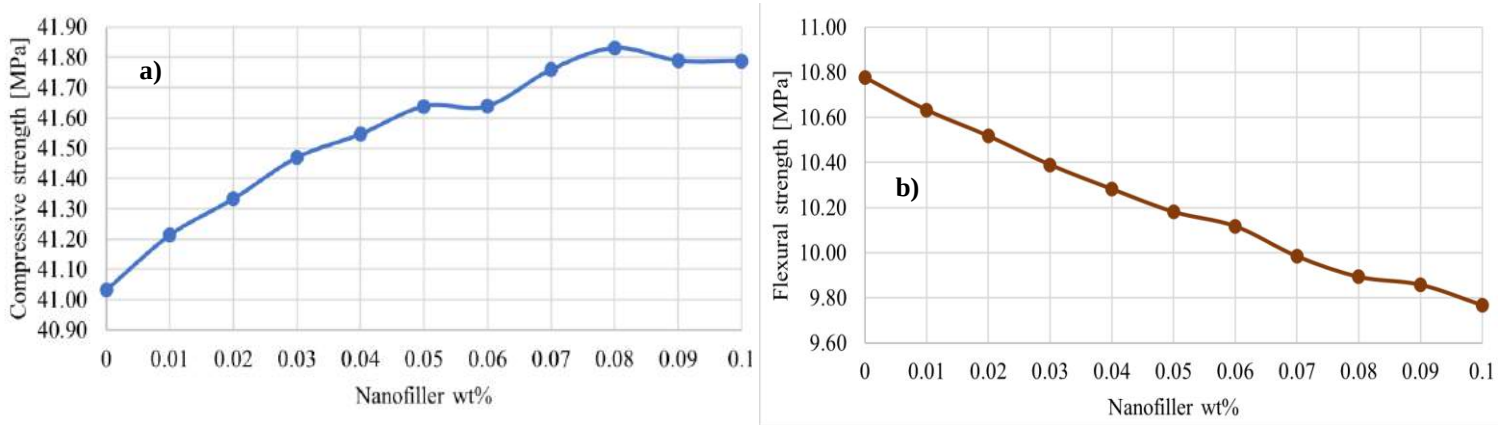

Figure A2.4 Change of compressive strength (a) and flexural strength (b) of material cem42504 with increase of nanofiller wt%

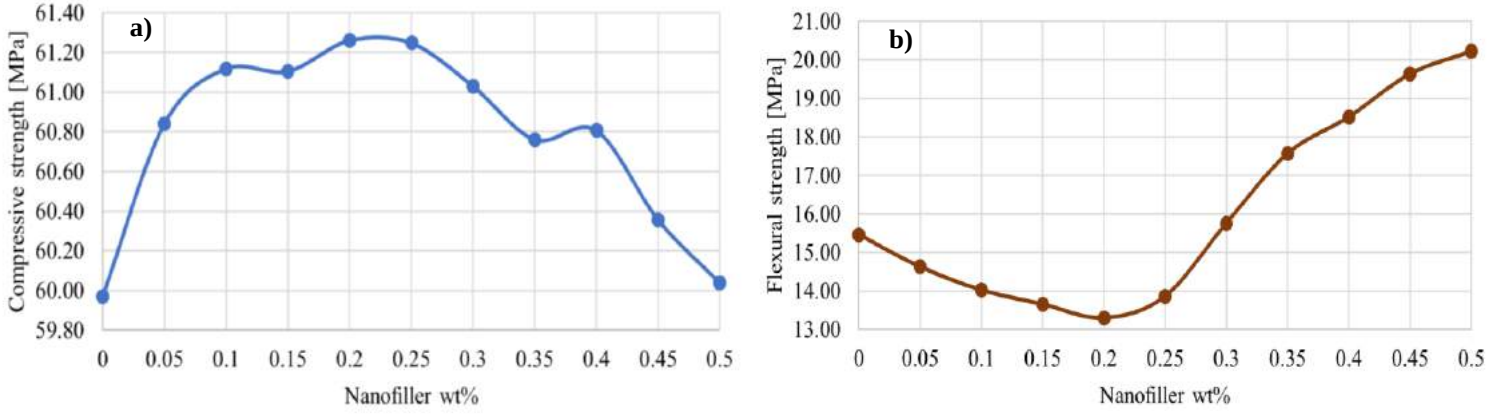

Figure A2.5 Change of compressive strength (a) and flexural strength (b) of material cem42503 with increase of nanofiller wt%

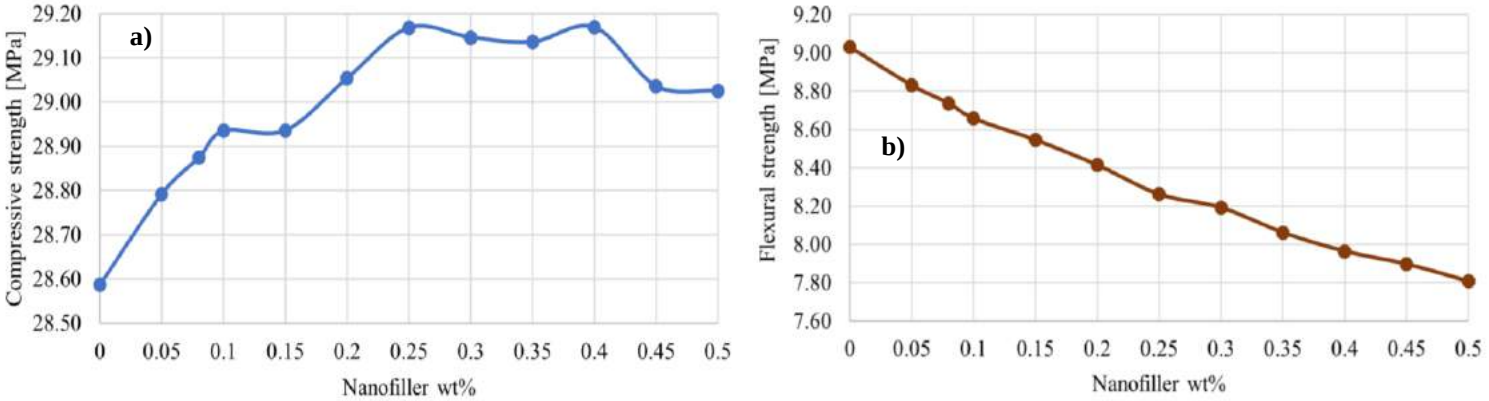

Figure A2.6 Change of compressive strength (a) and flexural strength (b) of material mor42504850364 with increase of nanofiller wt%

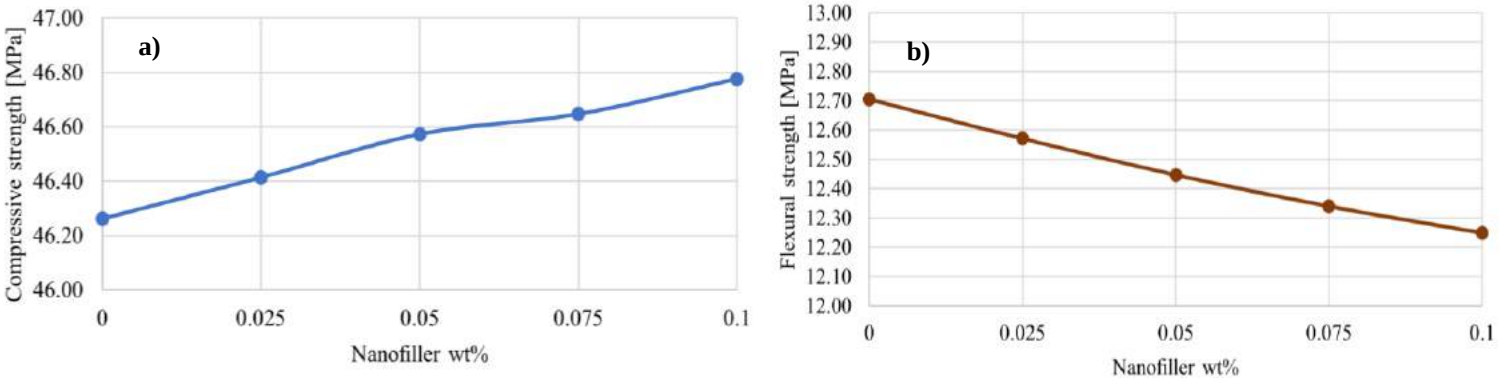

Figure A2.7 Change of compressive strength (a) and flexural strength (b) of material mor42505033 with increase of nanofiller wt%

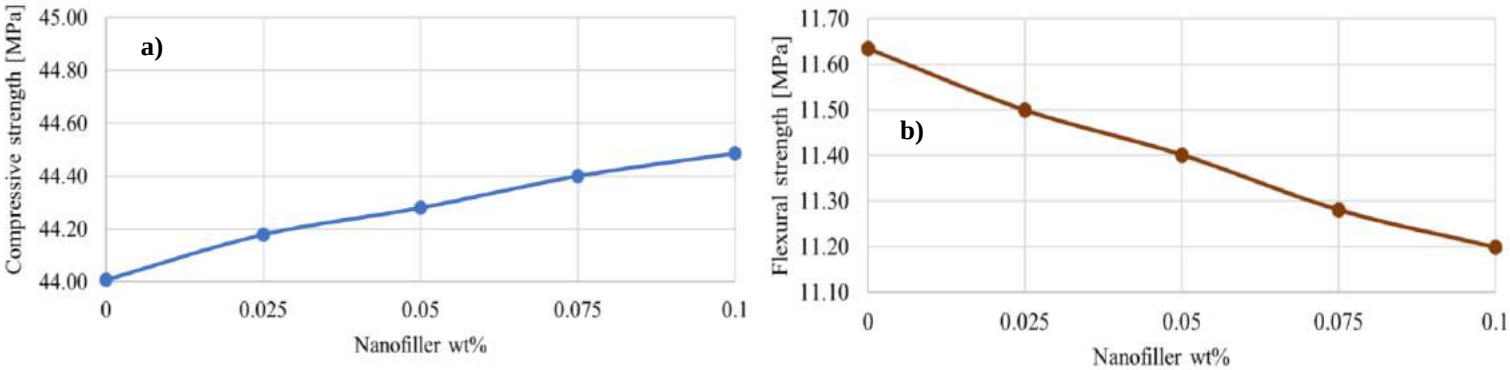

Figure A2.8 Change of compressive strength (a) and flexural strength (b) of material mor425055033 with increase of nanofiller wt%

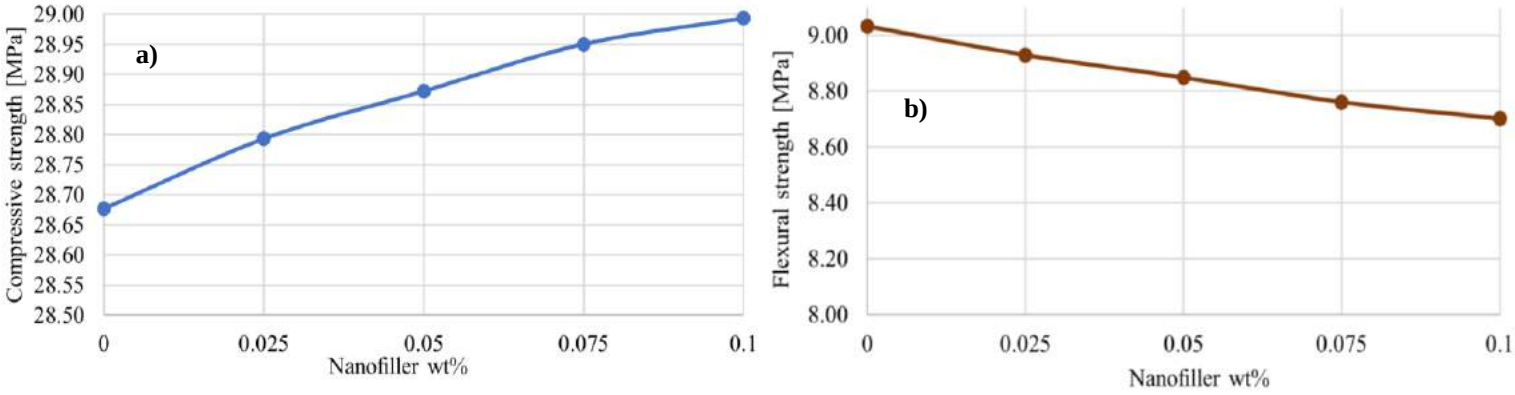

Figure A2.9 Change of compressive strength (a) and flexural strength (b) of material mor42505033spl with increase of nanofiller wt%

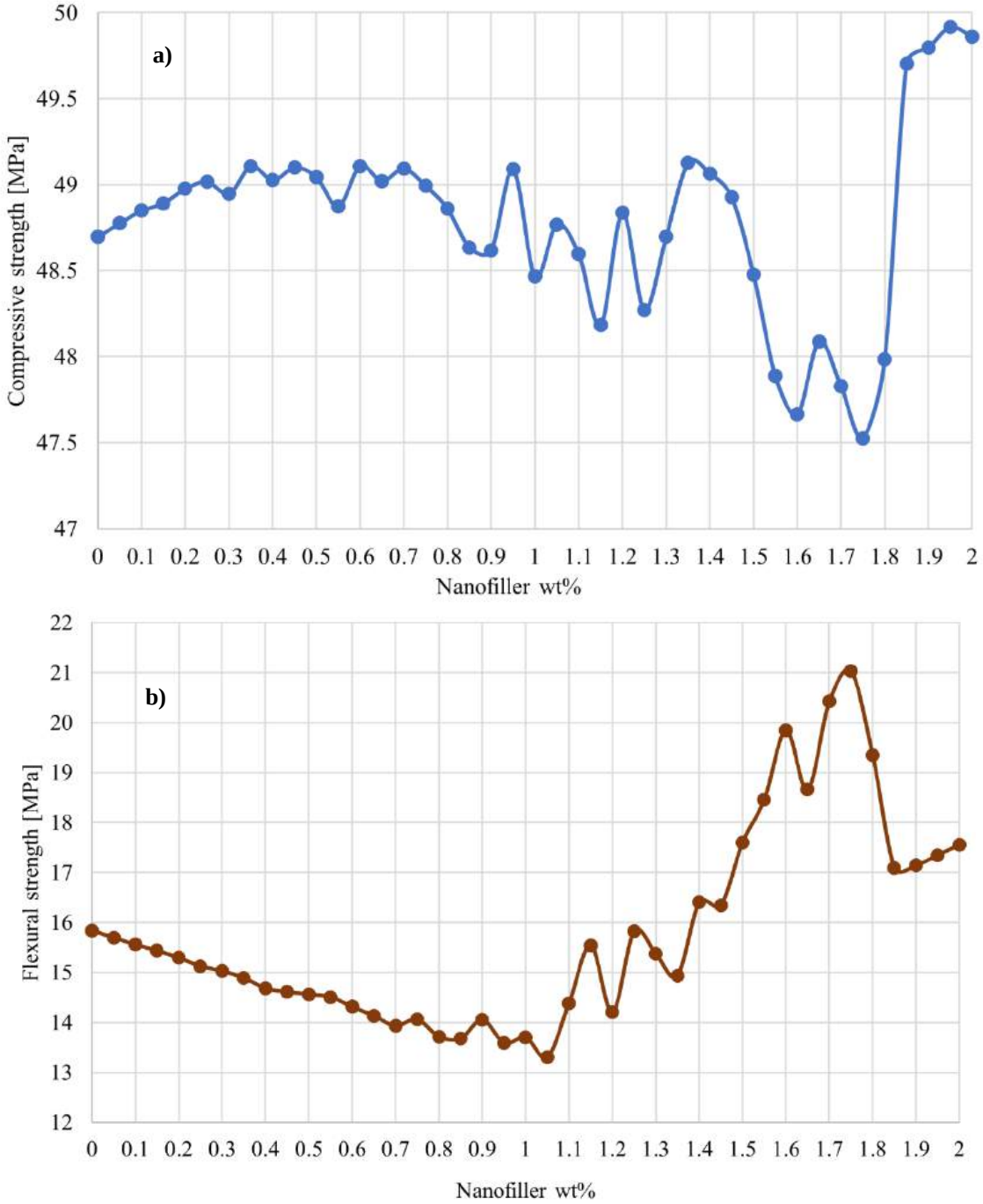

Figure A2.10 Change of compressive strength (a) and flexural strength (b) of material mor52505033spl with increase of nanofiller wt%

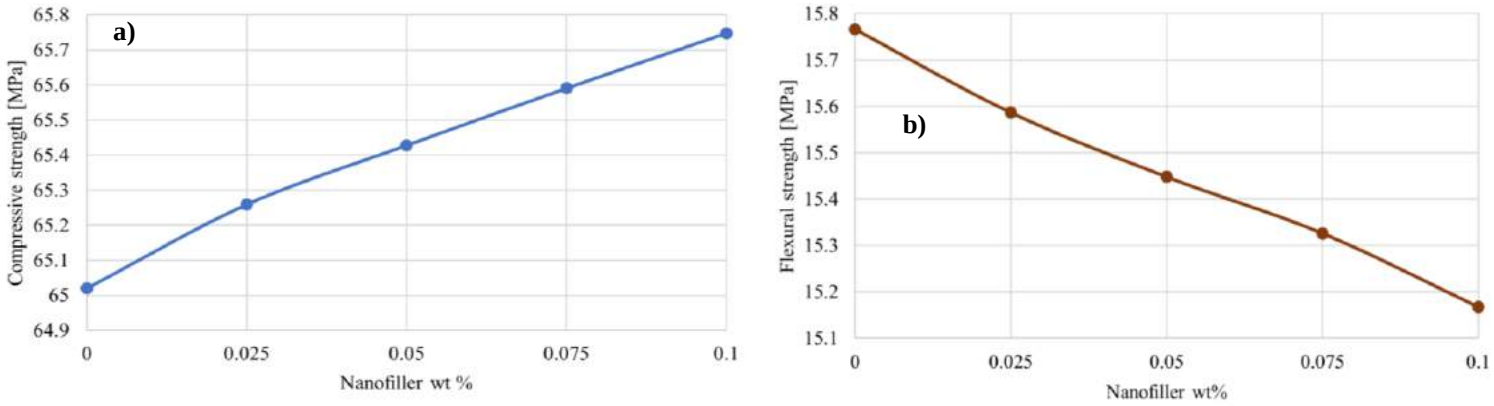

Figure A2.11 Change of compressive strength (a) and flexural strength (b) of material mor425035033spl with increase of nanofiller wt%

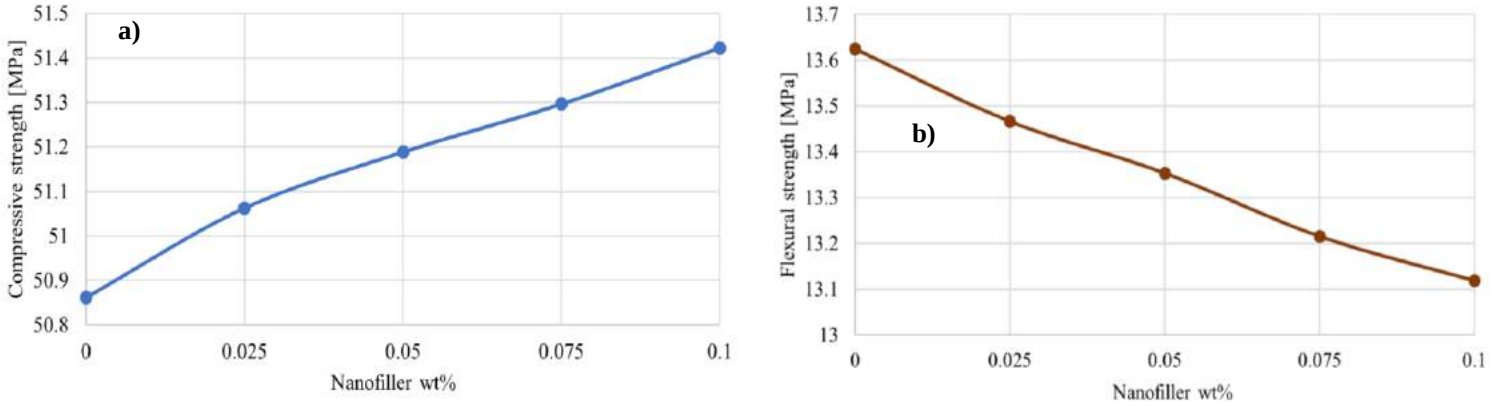

Figure A2.12 Change of compressive strength (a) and flexural strength (b) of material mor425045033spl with increase of nanofiller wt%

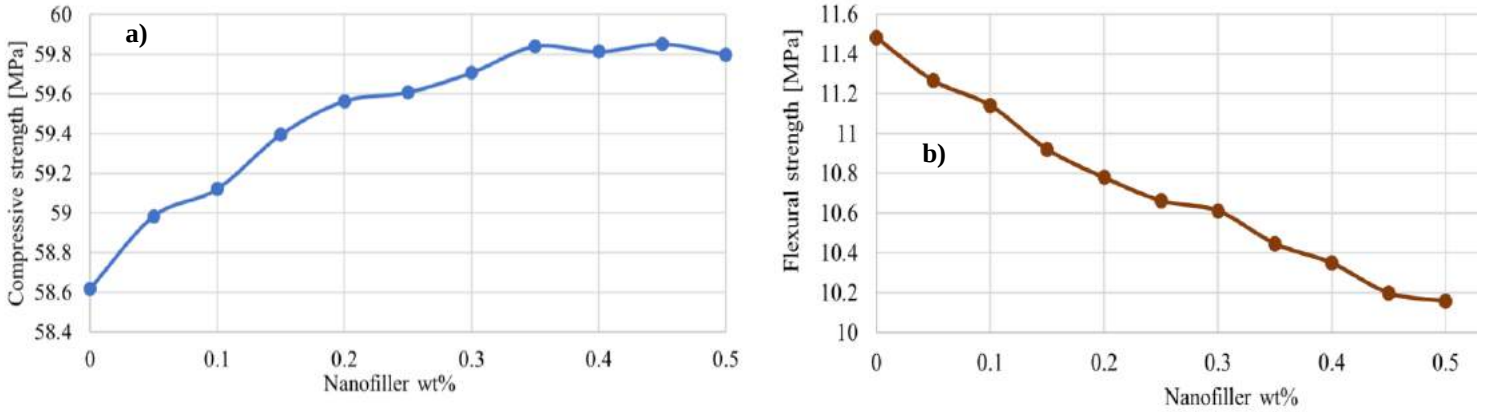

Figure A2.13 Change of compressive strength (a) and flexural strength (b) of material mor425040263spl with increase of nanofiller wt%

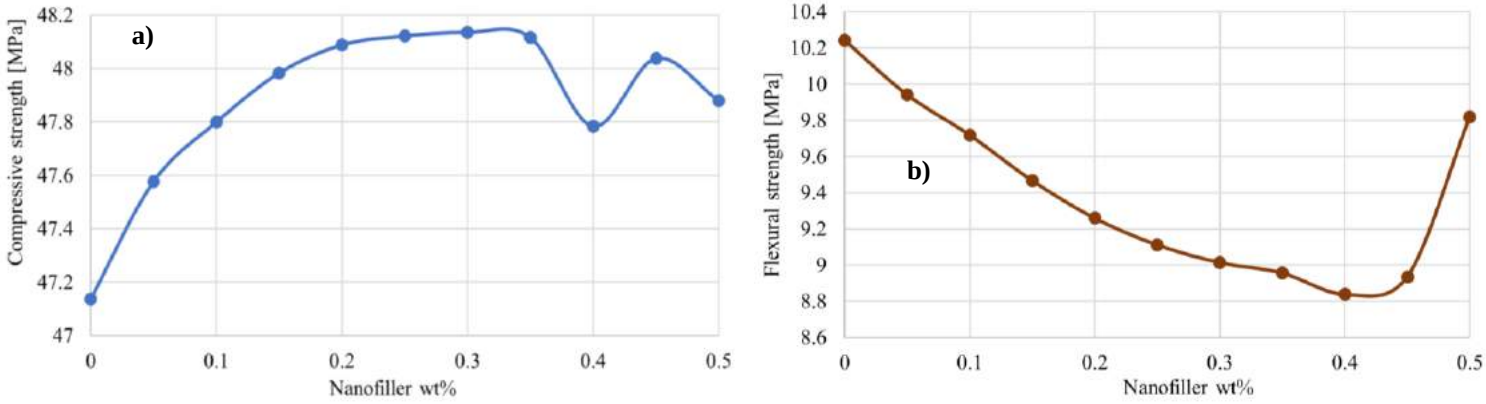

Figure A2.14 Change of compressive strength (a) and flexural strength (b) of material mor425045067spl with increase of nanofiller wt%

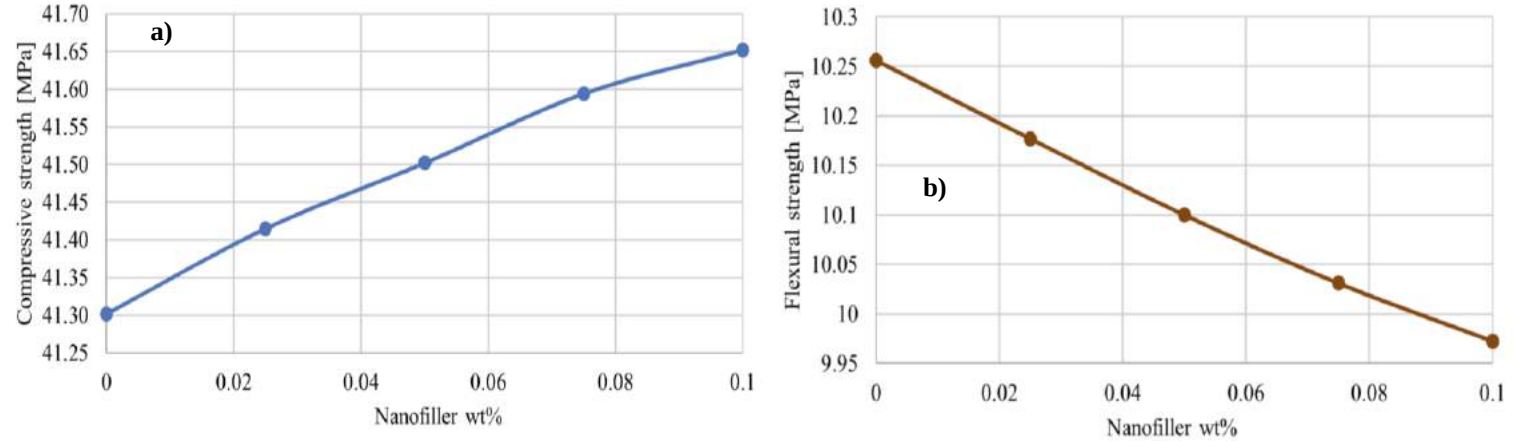

Figure A2.15 Change of compressive strength (a) and flexural strength (b) of material con425051038049 with increase of CNT wt%

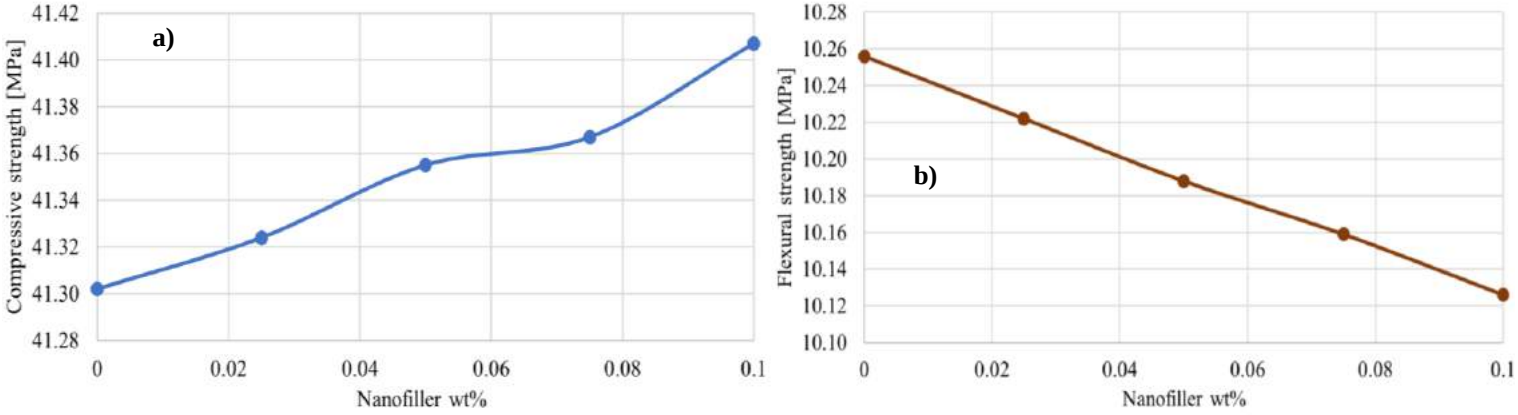

Figure A2.16 Change of compressive strength (a) and flexural strength (b) of material con425051038049 with increase of CNF wt%

A3. Validation

Table A3.1 Validation of results of numerical simulations by comparison to experimental testing results

	Experimental testing (exp)				Simulated testing (sim)				Difference between exp & sim	
	Compression		Bending		Compression		Bending		Compression	Bending
Validated sample	[MPa]	Increase %	[MPa]	Increase %	[MPa]	Increase %	[MPa]	Increase %	%	%
cem52504	56.7	0	8.7	0	51.132	0	13.318	0	-9.82%	53.08%
cem52504NT05	69.41	22.42%	9.56	9.89%	52.509	2.69%	16.614	24.75%	-24.35%	73.79%
cem425033	84.8	0	4	0	76.473	0	6.123	0	-9.82%	53.08%
cem425033NT002	90.1	6.25%	4.3	7.50%	77.139	0.87%	5.9609	-2.65%	-14.39%	38.63%
cem425033NT005	95.6	12.74%	4.6	15.00%	77.637	1.52%	5.7689	-5.78%	-18.79%	25.41%
cem425033NT01	97.2	14.62%	5.2	30.00%	77.969	1.96%	5.5192	-9.86%	-19.78%	6.14%
cem42505	35.6	0	7.15	0	32.104	0	10.945	0	-9.82%	53.08%
cem42505NT008	35	-1.69%	7.37	3.08%	32.713	1.90%	10.11	-7.63%	-6.53%	37.18%
cem42505NT01	35.4	-0.56%	7.09	-0.84%	32.621	1.61%	9.9818	-8.80%	-7.85%	40.79%
cem42504	45.5	0	7.04	0	41.032	0	10.776	0	-9.82%	53.07%
cem42504NT005	50.17	10.26%	7.83	11.22%	41.638	1.48%	10.181	-5.52%	-17.01%	30.03%
cem42504NT01	55.05	20.99%	8.25	17.19%	41.788	1.84%	9.7671	-9.36%	-24.09%	18.39%
cem42503	66.5	0	10.1	0	59.97	0	15.461	0	-9.82%	53.08%
cem42503NT01	66.2	-0.45%	11.4	12.87%	61.118	1.91%	14.022	-9.31%	-7.68%	23.00%
cem42503NT03	67.1	0.90%	11.7	15.84%	61.031	1.77%	15.756	1.91%	-9.04%	34.67%
cem42503NT05	62.5	-6.02%	10.3	1.98%	60.038	0.11%	20.224	30.81%	-3.94%	96.35%
mor42504850364	31.7	0	5.9	0	28.587	0	9.0314	0	-9.82%	53.07%
mor42504850364NT008	33.7	6.31%	10.3	74.58%	28.874	1.00%	8.7375	-3.25%	-14.32%	-15.17%
mor42504850364NT01	33.8	6.62%	11.1	88.14%	28.935	1.22%	8.6584	-4.13%	-14.39%	-22.00%
mor42504850364NT03	33.9	6.94%	9.1	54.24%	29.146	1.96%	8.1917	-9.30%	-14.02%	-9.98%
more42504850364NT05	35.3	11.36%	8.6	45.76%	29.025	1.53%	7.8063	-13.56%	-17.78%	-9.23%
mor42505033	51.3	0	8.3	0	46.262	0	12.705	0	-9.82%	53.07%
mor42505033NT005	52.9	3.12%	8.8	6.02%	46.573	0.67%	12.447	-2.03%	-11.96%	41.44%
mor42505033NT01	58.8	14.62%	9.9	19.28%	46.776	1.11%	12.249	-3.59%	-20.45%	23.73%
mor425055033	51.3	0	8.3	0	28.677	0	9.0314	0	-44.10%	8.81%
mor425055033NT005	44.3	-13.65%	7.8	-6.02%	44.28	54.41%	11.401	26.24%	-0.05%	46.17%
mor425055033NT01	51	-0.58%	9.2	10.84%	44.486	55.13%	11.198	23.99%	-12.77%	21.72%
mor42505033spl	48.8	0	7.6	0	48.697	0	15.843	0	-0.21%	108.46%
mor42505033splNT01	33.9	-30.53%	12.9	69.74%	28.993	-40.46%	8.7014	-45.08%	-14.47%	-32.55%
mor52505033spl	54	0	10.35	0	48.697	0	15.843	0	-9.82%	53.07%
mor52505033splNF025	54.5	0.93%	10.2	-1.45%	49.018	0.66%	15.126	-4.53%	-10.06%	48.29%
mor52505033splNF05	55	1.85%	10.4	0.48%	49.044	0.71%	14.563	-8.08%	-10.83%	40.03%
mor52505033splNF075	55.1	2.04%	11.1	7.25%	48.994	0.61%	14.063	-11.24%	-11.08%	26.69%
mor52505033splNF1	54.8	1.48%	11.3	9.18%	48.469	-0.47%	13.699	-13.53%	-11.55%	21.23%
mor52505033splNF125	55	1.85%	11.25	8.70%	48.273	-0.87%	15.823	-0.13%	-12.23%	40.65%
mor52505033splNF15	56.5	4.63%	11.35	9.66%	48.479	-0.45%	17.603	11.11%	-14.20%	55.09%
mor52505033splNF175	57.5	6.48%	11.05	6.76%	47.526	-2.40%	21.032	32.75%	-17.35%	90.33%
mor52505033splNF2	57.6	6.67%	11.45	10.63%	49.862	2.39%	17.559	10.83%	-13.43%	53.35%
mor425035033spl	72.1	0	10.3	0	65.02	0	15.767	0	-9.82%	53.08%

mor425035033splNT005	75.8	5.13%	12.7	23.30%	65.428	0.63%	15.448	-2.02%	-13.68%	21.64%
mor425035033splNT01	84.3	16.92%	13.1	27.18%	65.748	1.12%	15.167	-3.81%	-22.01%	15.78%
mor425045033spl	56.4	0	8.9	0	50.861	0	13.624	0	-9.82%	53.08%
mor425045033splNT005	56.5	0.18%	9.9	11.24%	51.188	0.64%	13.353	-1.99%	-9.40%	34.88%
mor425045033splNT01	64.7	14.72%	10.6	19.10%	51.422	1.10%	13.118	-3.71%	-20.52%	23.75%
mor425040263spl	65	0	7.5	0	58.617	0	11.481	0	-9.82%	53.08%
mor425040263splNT05	76.25	17.31%	8.2	9.33%	59.798	2.01%	10.157	-11.53%	-21.58%	23.87%
mor425045067spl	52.27	0	6.69	0	47.137	0	10.241	0	-9.82%	53.08%
mor425045067splNT05	62.13	18.86%	8.37	25.11%	47.88	1.58%	9.818	-4.13%	-22.94%	17.30%
con425051038049	45.8	0	6.7	0	41.302	0	10.256	0	-9.82%	53.07%
con425051038049NT01	48.5	5.90%	10	49.25%	41.652	0.85%	9.9725	-2.76%	-14.12%	-0.27%
con425051038049NF01	46.7	1.97%	9.9	47.76%	41.407	0.25%	10.126	-1.27%	-11.33%	2.28%

Appendix B – Artificial Neural Networks

B1. Datasets - Group I

Table B1.1 Dataset 1 - COMP

	Cement [kg/m^3]	Water [kg/m^3]	Fine aggregate [kg/m^3]	Coarse aggregate [kg/m^3]	Superplasticizer [kg/m^3]	Nanofiller [wt%]		Cement class	Functionalization	Cross-section [cm]	Demolding age [h]	Age [h]	Compressive strength [MPa]
						CNT	CNF						
#	min/max	min/max	min/max	min/max	min/max	min/max	min/max	0/1	0/1	0/1	min/max	min/max	min/max
1	542	262.87	1490.5	0	0	0	0	42.5	no	4x4x8	24	3	19.8
2	542	262.87	1490.5	0	0	0	0	42.5	no	4x4x8	24	7	25.6
3	542	262.87	1490.5	0	0	0	0	42.5	no	4x4x8	24	28	31.7
4	542	262.87	1490.5	0	0	0.1	0	42.5	no	4x4x8	24	3	22.6
5	542	262.87	1490.5	0	0	0.1	0	42.5	no	4x4x8	24	7	26.5
6	542	262.87	1490.5	0	0	0.1	0	42.5	no	4x4x8	24	28	33.8
7	542	262.87	1490.5	0	0	0.5	0	42.5	no	4x4x8	24	3	22.7
8	542	262.87	1490.5	0	0	0.5	0	42.5	no	4x4x8	24	7	27.6
9	542	262.87	1490.5	0	0	0.5	0	42.5	no	4x4x8	24	28	35.3
10	542	262.87	1490.5	0	0	0	0.1	42.5	no	4x4x8	24	3	22.5
11	542	262.87	1490.5	0	0	0	0.1	42.5	no	4x4x8	24	7	25.2
12	542	262.87	1490.5	0	0	0	0.1	42.5	no	4x4x8	24	28	33.7
13	380	193.8	999.4	775.2	0	0	0	42.5	no	7x14	24	28	45.8
14	380	193.8	999.4	775.2	0	0.1	0	42.5	no	7x14	24	28	48.5
15	380	193.8	999.4	775.2	0	0	0.1	42.5	no	7x14	24	28	46.7
16	380	121.6	547.2	839.8	0	0	0	42.5	no	7x14	24	28	64.5
17	380	121.6	547.2	839.8	0	0.1	0	42.5	no	7x14	24	28	66
18	512.10	256.05	1536.3	0	2.048	0	0	42.5	no	4x4x8	24	28	31.8
19	512.10	256.05	1536.3	0	2.048	0.1	0	42.5	no	4x4x8	24	28	33.5
20	512.10	256.05	1536.3	0	2.048	0.1	0	42.5	no	4x4x8	24	28	33.1
21	512.10	256.05	1536.3	0	2.048	0.1	0	42.5	yes	4x4x8	24	28	33.9
22	1071.43	642.85	0	0	0	0.1	0	42.5	yes	5x5x5	24	28	40
23	1363.64	681.82	0	0	0	0	0	52.5	no	4x4x16	24	28	56.7
24	1338.21	669.10	0	0	0	0.5	0	52.5	no	4x4x16	24	28	69.41
25	1338.21	669.10	0	0	0	0.5	0	52.5	yes	4x4x16	24	28	72.13
26	1363.64	681.82	0	0	0	0	0	42.5	no	5x5x5	24	28	74.8
27	1363.64	681.82	0	0	1.636	0.03	0	42.5	no	5x5x5	24	28	83.1
28	1363.64	681.82	0	0	4.364	0.08	0	42.5	no	5x5x5	24	28	80
29	1363.64	681.82	0	0	8.182	0.15	0	42.5	no	5x5x5	24	28	86.9
30	1363.64	681.82	0	0	13.636	0.25	0	42.5	no	5x5x5	24	28	91.8
31	1363.64	681.82	0	0	19.091	0.35	0	42.5	no	5x5x5	24	28	90
32	1363.64	681.82	0	0	27.273	0.5	0	42.5	no	5x5x5	24	28	94.3
33	359.20	179.6	1077.6	0	0	0	0	52.5	no	4x4x8	24	7	43.5
34	359.20	179.6	1077.6	0	0	0	0	52.5	no	4x4x8	24	28	54
35	359.20	179.6	1077.6	0	0	0	0	52.5	no	4x4x8	24	120	58
36	353.72	176.86	1061.1	0	1.03	0	0.25	52.5	no	4x4x8	24	7	43
37	353.72	176.86	1061.1	0	1.03	0	0.25	52.5	no	4x4x8	24	28	54.5
38	353.72	176.86	1061.1	0	1.03	0	0.25	52.5	no	4x4x8	24	120	60.6
39	348.32	174.16	1044.9	0	2.02	0	0.5	52.5	no	4x4x8	24	7	43.5
40	348.32	174.16	1044.9	0	2.02	0	0.5	52.5	no	4x4x8	24	28	55
41	348.32	174.16	1044.9	0	2.02	0	0.5	52.5	no	4x4x8	24	120	61
42	343	171.50	1029.0	0	2.95	0	0.75	52.5	no	4x4x8	24	7	44
43	343	171.50	1029.0	0	2.95	0	0.75	52.5	no	4x4x8	24	28	55.1
44	343	171.50	1029.0	0	2.95	0	0.75	52.5	no	4x4x8	24	120	62.5
45	337.77	168.88	1013.3	0	3.85	0	1	52.5	no	4x4x8	24	7	46.5
46	337.77	168.88	1013.3	0	3.85	0	1	52.5	no	4x4x8	24	28	54.8
47	337.77	168.88	1013.3	0	3.85	0	1	52.5	no	4x4x8	24	120	61.8
48	332.61	166.31	997.83	0	4.86	0	1.25	52.5	no	4x4x8	24	7	47.5
49	332.61	166.31	997.83	0	4.86	0	1.25	52.5	no	4x4x8	24	28	55
50	332.61	166.31	997.83	0	4.86	0	1.25	52.5	no	4x4x8	24	120	62.5
51	327.53	163.77	982.60	0	5.86	0	1.5	52.5	no	4x4x8	24	7	46
52	327.53	163.77	982.60	0	5.86	0	1.5	52.5	no	4x4x8	24	28	56.5
53	327.53	163.77	982.60	0	5.86	0	1.5	52.5	no	4x4x8	24	120	65
54	322.53	161.27	967.60	0	6.29	0	1.75	52.5	no	4x4x8	24	7	45.5
55	322.53	161.27	967.60	0	6.29	0	1.75	52.5	no	4x4x8	24	28	57.5

56	322.53	161.27	967.60	0	6.29	0	1.75	52.5	no	4x4x8	24	120	65.8
57	317.61	158.81	952.84	0	6.73	0	2	52.5	no	4x4x8	24	7	50
58	317.61	158.81	952.84	0	6.73	0	2	52.5	no	4x4x8	24	28	57.6
59	317.61	158.81	952.84	0	6.73	0	2	52.5	no	4x4x8	24	120	67
60	1200	600	0	0	0	0	0	52.5	no	4x4x16	24	7	38.65
61	1200	600	0	0	0	0	0	52.5	no	4x4x16	24	28	46.7
62	1200	600	0	0	1.8	0	0.5	52.5	no	4x4x16	24	7	39.12
63	1200	600	0	0	1.8	0	0.5	52.5	no	4x4x16	24	28	47.2
64	1200	600	0	0	3.6	0	1	52.5	no	4x4x16	24	7	38.78
65	1200	600	0	0	3.6	0	1	52.5	no	4x4x16	24	28	45.67
66	1200	600	0	0	6.6	0	2	52.5	no	4x4x16	24	7	37.8
67	1200	600	0	0	6.6	0	2	52.5	no	4x4x16	24	28	44.56
68	542	262.87	1490.5	0	0	0	0	42.5	no	4x4x8	24	3	19.95
69	542	262.87	1490.5	0	0	0	0	42.5	no	4x4x8	24	7	25
70	542	262.87	1490.5	0	0	0	0	42.5	no	4x4x8	24	28	31.7
71	542	262.87	1490.5	0	0	0.08	0	42.5	no	4x4x8	24	3	22.3
72	542	262.87	1490.5	0	0	0.08	0	42.5	no	4x4x8	24	7	26.1
73	542	262.87	1490.5	0	0	0.08	0	42.5	no	4x4x8	24	28	33.7
74	542	262.87	1490.5	0	0	0.1	0	42.5	no	4x4x8	24	3	22.9
75	542	262.87	1490.5	0	0	0.1	0	42.5	no	4x4x8	24	7	26.2
76	542	262.87	1490.5	0	0	0.1	0	42.5	no	4x4x8	24	28	33.8
77	542	262.87	1490.5	0	0	0.3	0	42.5	no	4x4x8	24	3	21.1
78	542	262.87	1490.5	0	0	0.3	0	42.5	no	4x4x8	24	7	28
79	542	262.87	1490.5	0	0	0.3	0	42.5	no	4x4x8	24	28	33.9
80	542	262.87	1490.5	0	0	0.5	0	42.5	no	4x4x8	24	3	22.8
81	542	262.87	1490.5	0	0	0.5	0	42.5	no	4x4x8	24	7	27.6
82	542	262.87	1490.5	0	0	0.5	0	42.5	no	4x4x8	24	28	35.3
83	664.80	232.68	1994.4	0	7.9776	0	0	42.5	no	4x4x8	24	7	68.1
84	664.80	232.68	1994.4	0	7.9776	0	0	42.5	no	4x4x8	24	28	72.1
85	664.80	232.68	1994.4	0	7.9776	0	0	42.5	no	4x4x8	24	90	73.6
86	644.66	225.63	1933.9	0	7.7359	0.1	0	42.5	no	4x4x8	24	7	76.8
87	644.66	225.63	1933.9	0	7.7359	0.1	0	42.5	no	4x4x8	24	28	84.3
88	644.66	225.63	1933.9	0	7.7359	0.1	0	42.5	no	4x4x8	24	90	86.8
89	654.65	229.12	1963.9	0	7.8558	0.05	0	42.5	no	4x4x8	24	7	72.7
90	654.65	229.12	1963.9	0	7.8558	0.05	0	42.5	no	4x4x8	24	28	75.8
91	654.65	229.12	1963.9	0	7.8558	0.05	0	42.5	no	4x4x8	24	90	77.9
92	654.65	229.12	1963.9	0	7.8558	0.05	0	42.5	no	4x4x8	24	7	80.6
93	654.65	229.12	1963.9	0	7.8558	0.05	0	42.5	no	4x4x8	24	28	88.8
94	654.65	229.12	1963.9	0	7.8558	0.05	0	42.5	no	4x4x8	24	90	90.4
95	525.56	236.50	709.50	0	0.78834	0	0	42.5	no	4x4x8	24	7	45.3
96	525.56	236.50	709.50	0	0.78834	0	0	42.5	no	4x4x8	24	28	56.4
97	525.56	236.50	709.50	0	0.78834	0	0	42.5	no	4x4x8	24	90	57.9
98	509.64	229.33	688.01	0	0.7645	0.1	0	42.5	no	4x4x8	24	7	53.2
99	509.64	229.33	688.01	0	0.7645	0.1	0	42.5	no	4x4x8	24	28	64.7
100	509.64	229.33	688.01	0	0.7645	0.1	0	42.5	no	4x4x8	24	90	65.8
101	517.54	232.89	698.67	0	0.7763	0.05	0	42.5	no	4x4x8	24	7	46.7
102	517.54	232.89	698.67	0	0.7763	0.05	0	42.5	no	4x4x8	24	28	56.5
103	517.54	232.89	698.67	0	0.7763	0.05	0	42.5	no	4x4x8	24	90	57.5
104	517.54	232.89	698.67	0	0.7763	0.05	0	42.5	no	4x4x8	24	7	55.4
105	517.54	232.89	698.67	0	0.7763	0.05	0	42.5	no	4x4x8	24	28	65.2
106	517.54	232.89	698.67	0	0.7763	0.05	0	42.5	no	4x4x8	24	90	65.7
107	512.10	256.05	1536.3	0	0	0	0	42.5	no	4x4x8	24	7	38.1
108	512.10	256.05	1536.3	0	0	0	0	42.5	no	4x4x8	24	28	51.3
109	512.10	256.05	1536.3	0	0	0	0	42.5	no	4x4x8	24	90	52.4
110	496.59	248.29	1489.7	0	0	0.1	0	42.5	no	4x4x8	24	7	46.3
111	496.59	248.29	1489.7	0	0	0.1	0	42.5	no	4x4x8	24	28	58.8
112	496.59	248.29	1489.7	0	0	0.1	0	42.5	no	4x4x8	24	90	61.5
113	504.28	252.14	1512.8	0	0	0.05	0	42.5	no	4x4x8	24	7	43
114	504.28	252.14	1512.8	0	0	0.05	0	42.5	no	4x4x8	24	28	52.9
115	504.28	252.14	1512.8	0	0	0.05	0	42.5	no	4x4x8	24	90	56.5
116	504.28	252.14	1512.8	0	0	0.05	0	42.5	no	4x4x8	24	7	45.6
117	504.28	252.14	1512.8	0	0	0.05	0	42.5	no	4x4x8	24	28	58.8
118	504.28	252.14	1512.8	0	0	0.05	0	42.5	no	4x4x8	24	90	59.5
119	499.30	274.62	1497.9	0	0	0	0	42.5	no	4x4x8	24	7	36.9
120	499.30	274.62	1497.9	0	0	0	0	42.5	no	4x4x8	24	28	48.8
121	499.30	274.62	1497.9	0	0	0	0	42.5	no	4x4x8	24	90	50.6
122	484.17	266.3	1452.5	0	0	0.1	0	42.5	no	4x4x8	24	7	38.9

123	484.17	266.3	1452.5	0	0	0.1	0	42.5	no	4x4x8	24	28	51
124	484.17	266.3	1452.5	0	0	0.1	0	42.5	no	4x4x8	24	90	52
125	491.68	270.42	1475	0	0	0.05	0	42.5	no	4x4x8	24	7	34.7
126	491.68	270.42	1475	0	0	0.05	0	42.5	no	4x4x8	24	28	44.3
127	491.68	270.42	1475	0	0	0.05	0	42.5	no	4x4x8	24	90	44.7
128	491.68	270.42	1475	0	0	0.05	0	42.5	no	4x4x8	24	7	42.1
129	491.68	270.42	1475	0	0	0.05	0	42.5	no	4x4x8	24	28	54.5
130	491.68	270.42	1475	0	0	0.05	0	42.5	no	4x4x8	24	90	58.1
131	572	188	572	1015	0	0	0	42.5	no	30x15	24	28	51.23
132	571	188	572	1015	0.22	0	0.16	42.5	no	30x15	24	28	73.08
133	570	188	572	1015	0.31	0	0.31	42.5	no	30x15	24	28	64.604
134	569	188	572	1015	0.71	0	0.78	42.5	no	30x15	24	28	53.5
135	566	188	572	1015	1.38	0	1.55	42.5	no	30x15	24	28	50.26
136	480	191	1005	901	0.49	0	0	42.5	no	30x15	24	28	45.505
137	480	191	942	901	0.49	0	0.25	42.5	no	30x15	24	28	43.44
138	448	191	877	838	0.62	0	0.5	42.5	no	30x15	24	28	51.64
139	448	191	877	838	0.62	0	1	42.5	yes	30x15	24	28	41.16
140	448	191	877	838	0.71	0	1.5	42.5	yes	30x15	24	28	39.78
141	478	191	1008	902	0.49	0	1	42.5	no	30x15	24	28	47.71
142	478	191	1008	902	0.85	0	1.5	42.5	no	30x15	24	28	52.33
143	478	191	1008	902	1.02	0	2	42.5	no	30x15	24	28	56.6
144	478	191	1008	902	1.56	0	2.5	42.5	no	30x15	24	28	51.57
145	478	191	1008	902	0.31	0	0.7	42.5	no	30x15	24	28	44.75
146	478	191	1008	902	0.49	0	1	42.5	no	30x15	24	28	55.23
147	478	191	1008	902	0.85	0	1.5	42.5	no	30x15	24	28	51.15
148	478	191	1008	902	1.02	0	2	42.5	no	30x15	24	28	43.78
149	478	191	1008	902	1.56	0	2.5	42.5	no	30x15	24	28	44.33
150	1500	495	0	0	0	0	0	42.5	no	5x5x5	24	7	40.4
151	1500	495	0	0	0	0.025	0	42.5	no	5x5x5	24	7	44.2
152	1500	495	0	0	0	0.05	0	42.5	no	5x5x5	24	7	47.8
153	1500	495	0	0	0	0.1	0	42.5	no	5x5x5	24	7	49.2
154	1500	495	0	0	0	0	0	42.5	no	5x5x5	24	28	84.8
155	1500	495	0	0	0	0.025	0	42.5	no	5x5x5	24	28	90.1
156	1500	495	0	0	0	0.05	0	42.5	no	5x5x5	24	28	95.6
157	1500	495	0	0	0	0.1	0	42.5	no	5x5x5	24	28	97.2
158	1277	574	0	0	0	0	0	42.5	yes	5x5x5	24	28	37.6
159	1274.55	573.55	0	0	0	0.1	0	42.5	yes	5x5x5	24	28	44.3
160	1264.77	569.14	0	0	0	0.5	0	42.5	yes	5x5x5	24	28	51.2
161	1252.77	563.74	0	0	0	1	0	42.5	yes	5x5x5	24	28	58.4
162	1241.01	558.45	0	0	0	1.5	0	42.5	yes	5x5x5	24	28	59.8
163	1071.43	642.86	0	0	0	0	0	42.5	yes	5x5x5	24	28	41.3
164	1069.40	641.64	0	0	0	0.1	0	42.5	yes	5x5x5	24	28	48.2
165	1061.87	637.12	0	0	0	0.5	0	42.5	yes	5x5x5	24	28	56.8
166	1031.95	619.17	0	0	0	1	0	42.5	yes	5x5x5	24	28	66.3
167	1002.86	601.72	0	0	0	1.5	0	42.5	yes	5x5x5	24	28	68.2
168	974.60	584.76	0	0	0	2	0	42.5	yes	5x5x5	24	28	61.5
169	897.91	538.75	628.54	0	0	0	0	42.5	yes	5x5x5	24	28	40.6
170	887.63	532.58	621.34	0	0	0.1	0	42.5	yes	5x5x5	24	28	51.3
171	877.47	526.48	614.23	0	0	0.5	0	42.5	yes	5x5x5	24	28	60.7
172	867.43	520.45	607.2	0	0	1	0	42.5	yes	5x5x5	24	28	76.3
173	857.50	514.5	600.25	0	0	1.5	0	42.5	yes	5x5x5	24	28	87.7
174	847.68	508.61	593.38	0	0	2	0	42.5	yes	5x5x5	24	28	95.6
175	1040.37	468.17	728.26	0	0	0	0	42.5	yes	5x5x5	24	28	38.6
176	1028.46	462.81	719.92	0	0	0.1	0	42.5	yes	5x5x5	24	28	46.3
177	1016.69	457.51	711.68	0	0	0.5	0	42.5	yes	5x5x5	24	28	56.1
178	1005.05	452.27	703.53	0	0	1	0	42.5	yes	5x5x5	24	28	68.1
179	993.54	447.09	695.48	0	0	1.5	0	42.5	yes	5x5x5	24	28	78
180	899.93	539.96	629.95	0	0	0	0	42.5	yes	5x5x5	24	28	42.27
181	889.63	533.78	622.74	0	0	0.1	0	42.5	yes	5x5x5	24	28	53.7
182	879.44	527.66	615.61	0	0	0.5	0	42.5	yes	5x5x5	24	28	60.7
183	869.38	521.62	608.56	0	0	1	0	42.5	yes	5x5x5	24	28	80.33
184	859.42	515.65	601.59	0	0	1.5	0	42.5	yes	5x5x5	24	28	91
185	849.59	509.75	594.71	0	0	2	0	42.5	yes	5x5x5	24	28	102.57
186	1200	600	0	0	0	0	0	42.5	no	4x4x8	24	28	35.6
187	1200	600	0	0	0	0.1	0	42.5	no	4x4x8	24	28	20.4
188	1200	600	0	0	0	0.1	0	42.5	no	4x4x8	24	28	30.1
189	1200	600	0	0	0	0.1	0	42.5	no	4x4x8	24	28	32.4

190	1200	600	0	0	0	0.08	0	42.5	no	4x4x8	24	28	35
191	1200	600	0	0	0	0.1	0	42.5	yes	4x4x8	48	28	32
192	1200	600	0	0	0	0.1	0	42.5	yes	4x4x8	48	28	35.4
193	1500	600	0	0	0	0	0	42.5	no	4x4x8	24	28	45.5
194	1500	600	0	0	0	0.05	0	42.5	no	4x4x8	24	28	45.92
195	1500	600	0	0	0	0.05	0	42.5	no	4x4x8	24	28	50.17
196	1500	600	0	0	0	0.1	0	42.5	no	4x4x8	24	28	50.09
197	1500	600	0	0	0	0.1	0	42.5	no	4x4x8	24	28	55.05
198	320.17	252.93	1921	0	0	0	0	42.5	no	7x7x7	24	3	5.9
199	320.17	252.93	1921	0	0	0	0	42.5	no	7x7x7	24	7	8.9
200	320.17	252.93	1921	0	0	0	0	42.5	no	7x7x7	24	14	9.9
201	320.17	252.93	1921	0	0	0	0	42.5	no	7x7x7	24	28	11
202	320.17	252.93	1921	0	0	0.2	0	42.5	no	7x7x7	24	3	7.4
203	320.17	252.93	1921	0	0	0.2	0	42.5	no	7x7x7	24	7	8.3
204	320.17	252.93	1921	0	0	0.2	0	42.5	no	7x7x7	24	14	9.15
205	320.17	252.93	1921	0	0	0.2	0	42.5	no	7x7x7	24	28	11.9
206	320.17	252.93	1921	0	0	0.4	0	42.5	no	7x7x7	24	3	8.2
207	320.17	252.93	1921	0	0	0.4	0	42.5	no	7x7x7	24	7	8.2
208	320.17	252.93	1921	0	0	0.4	0	42.5	no	7x7x7	24	14	8.45
209	320.17	252.93	1921	0	0	0.4	0	42.5	no	7x7x7	24	28	12.85
210	320.17	252.93	1921	0	0	0.6	0	42.5	no	7x7x7	24	3	4.4
211	320.17	252.93	1921	0	0	0.6	0	42.5	no	7x7x7	24	7	7.98
212	320.17	252.93	1921	0	0	0.6	0	42.5	no	7x7x7	24	14	9.9
213	320.17	252.93	1921	0	0	0.6	0	42.5	no	7x7x7	24	28	10.9
214	320.17	252.93	1921	0	0	0.8	0	42.5	no	7x7x7	24	3	7.15
215	320.17	252.93	1921	0	0	0.8	0	42.5	no	7x7x7	24	7	7.9
216	320.17	252.93	1921	0	0	0.8	0	42.5	no	7x7x7	24	14	8.2
217	320.17	252.93	1921	0	0	0.8	0	42.5	no	7x7x7	24	28	9.3
218	496	272.8	1488	0	0	0	0	42.5	no	5x5x5	24	28	48
219	496	272.8	1488	0	0	0.05	0	42.5	no	5x5x5	24	28	55
220	496	272.8	1488	0	0	0.1	0	42.5	no	5x5x5	24	28	52
221	496	272.8	1488	0	0	0.15	0	42.5	no	5x5x5	24	28	53
222	620	250	0	0	0	0	0	42.5	no	5x5x5	24	3	21.72
223	620	250	0	0	0	0	0	42.5	no	5x5x5	24	3	23
224	620	250	0	0	0	0	0	42.5	no	5x5x5	24	3	20.36
225	620	250	0	0	0	0	0	42.5	no	5x5x5	24	7	30.76
226	620	250	0	0	0	0	0	42.5	no	5x5x5	24	7	30.32
227	620	250	0	0	0	0	0	42.5	no	5x5x5	24	7	28.8
228	620	250	0	0	0	0	0	42.5	no	5x5x5	24	14	38.16
229	620	250	0	0	0	0	0	42.5	no	5x5x5	24	14	35.44
230	620	250	0	0	0	0	0	42.5	no	5x5x5	24	14	39.36
231	620	250	0	0	0	0	0	42.5	no	5x5x5	24	28	61.2
232	620	250	0	0	0	0	0	42.5	no	5x5x5	24	28	48.44
233	620	250	0	0	0	0	0	42.5	no	5x5x5	24	28	71.56
234	620	250	0	0	0	0.2	0	42.5	no	5x5x5	24	7	43.8
235	620	250	0	0	0	0.2	0	42.5	no	5x5x5	24	28	73.1
236	620	250	0	0	0	0.4	0	42.5	no	5x5x5	24	7	43.9
237	620	250	0	0	0	0.4	0	42.5	no	5x5x5	24	28	64.3
238	620	250	0	0	0	0.2	0	42.5	yes	5x5x5	24	7	45.4
239	620	250	0	0	0	0.2	0	42.5	yes	5x5x5	24	28	68.2
240	620	250	0	0	0	0.4	0	42.5	yes	5x5x5	24	7	46
241	620	250	0	0	0	0.4	0	42.5	yes	5x5x5	24	28	69
242	620	250	0	0	0	0.2	0	42.5	yes	5x5x5	24	7	43.3
243	620	250	0	0	0	0.2	0	42.5	yes	5x5x5	24	28	85.7
244	620	250	0	0	0	0.4	0	42.5	yes	5x5x5	24	7	45.7
245	620	250	0	0	0	0.4	0	42.5	yes	5x5x5	24	28	57.9
246	474	237	793	793	0	0	0	42.5	no	7.5x15	24	28	34
247	474	237	793	793	0	0	0	42.5	no	7.5x15	24	28	39.9
248	474	237	793	793	0	0.01	0	42.5	no	7.5x15	24	28	41.2
249	400	160	660	1168	2.4	0	0	52.5	no	15x15x15	24	3	20
250	400	160	660	1168	2.4	0	0	52.5	no	15x15x15	24	7	39
251	400	160	660	1168	2.4	0	0	52.5	no	15x15x15	24	28	49
252	400	160	660	1168	2.4	0.05	0	52.5	yes	15x15x15	24	3	22
253	400	160	660	1168	2.4	0.05	0	52.5	yes	15x15x15	24	7	40
254	400	160	660	1168	2.4	0.05	0	52.5	yes	15x15x15	24	28	45
255	400	160	660	1168	2.4	0.07	0	52.5	yes	15x15x15	24	3	22
256	400	160	660	1168	2.4	0.07	0	52.5	yes	15x15x15	24	7	42

257	400	160	660	1168	2.4	0.07	0	52.5	yes	15x15x15	24	28	54
258	400	160	660	1168	2.4	0.08	0	52.5	yes	15x15x15	24	3	28
259	400	160	660	1168	2.4	0.08	0	52.5	yes	15x15x15	24	7	55
260	400	160	660	1168	2.4	0.08	0	52.5	yes	15x15x15	24	28	67
261	400	160	660	1168	2.4	0.1	0	52.5	yes	15x15x15	24	3	24
262	400	160	660	1168	2.4	0.1	0	52.5	yes	15x15x15	24	7	48
263	400	160	660	1168	2.4	0.1	0	52.5	yes	15x15x15	24	28	54
264	422	147	621	1284	5.06	0	0	52.5	no	15x15x15	24	3	34.1
265	422	147	621	1284	5.06	0	0	52.5	no	15x15x15	24	7	38.6
266	422	147	621	1284	5.06	0	0	52.5	no	15x15x15	24	28	61.2
267	422	147	621	1284	5.06	0.05	0	52.5	yes	15x15x15	24	3	31.4
268	422	147	621	1284	5.06	0.05	0	52.5	yes	15x15x15	24	7	55
269	422	147	621	1284	5.06	0.05	0	52.5	yes	15x15x15	24	28	78
270	422	147	621	1284	5.06	0.07	0	52.5	yes	15x15x15	24	3	29.6
271	422	147	621	1284	5.06	0.07	0	52.5	yes	15x15x15	24	7	50.8
272	422	147	621	1284	5.06	0.07	0	52.5	yes	15x15x15	24	28	72.6
273	422	147	621	1284	5.06	0.08	0	52.5	yes	15x15x15	24	3	38.6
274	422	147	621	1284	5.06	0.08	0	52.5	yes	15x15x15	24	7	51.4
275	422	147	621	1284	5.06	0.08	0	52.5	yes	15x15x15	24	28	73.2
276	422	147	621	1284	5.06	0.1	0	52.5	yes	15x15x15	24	3	33.4
277	422	147	621	1284	5.06	0.1	0	52.5	yes	15x15x15	24	7	59.3
278	422	147	621	1284	5.06	0.1	0	52.5	yes	15x15x15	24	28	83.6
279	422	147	621	1284	5.06	0.15	0	52.5	yes	15x15x15	24	7	52.5
280	422	147	621	1284	5.06	0.15	0	52.5	yes	15x15x15	24	28	77.6
281	504	142	683	1108	4.7	0	0	52.5	no	15x15x15	24	3	38
282	504	142	683	1108	4.7	0	0	52.5	no	15x15x15	24	7	42
283	504	142	683	1108	4.7	0	0	52.5	no	15x15x15	24	28	72
284	504	142	683	1108	4.7	0.05	0	52.5	yes	15x15x15	24	3	34
285	504	142	683	1108	4.7	0.05	0	52.5	yes	15x15x15	24	7	58
286	504	142	683	1108	4.7	0.05	0	52.5	yes	15x15x15	24	28	89
287	504	142	683	1108	4.7	0.07	0	52.5	yes	15x15x15	24	3	34
288	504	142	683	1108	4.7	0.07	0	52.5	yes	15x15x15	24	7	55
289	504	142	683	1108	4.7	0.07	0	52.5	yes	15x15x15	24	28	85
290	504	142	683	1108	4.7	0.08	0	52.5	yes	15x15x15	24	3	39
291	504	142	683	1108	4.7	0.08	0	52.5	yes	15x15x15	24	7	54
292	504	142	683	1108	4.7	0.08	0	52.5	yes	15x15x15	24	28	83
293	504	142	683	1108	4.7	0.1	0	52.5	yes	15x15x15	24	3	37
294	504	142	683	1108	4.7	0.1	0	52.5	yes	15x15x15	24	7	60
295	504	142	683	1108	4.7	0.1	0	52.5	yes	15x15x15	24	28	92
296	504	142	683	1108	4.7	0.15	0	52.5	yes	15x15x15	24	7	56
297	504	142	683	1108	4.7	0.15	0	52.5	yes	15x15x15	24	28	86
298	1875	375	0	0	14.0625	0	0	42.5	no	4x4x4	24	28	130
299	1875	375	0	0	14.0625	0.1	0	42.5	no	4x4x4	24	28	152
300	1875	375	0	0	14.0625	0.5	0	42.5	no	4x4x4	24	28	144
301	1875	375	0	0	14.0625	1	0	42.5	no	4x4x4	24	28	126
302	1875	375	0	0	14.0625	0	0	42.5	no	4x4x4	24	28	130
303	1875	375	0	0	14.0625	0	0.1	42.5	no	4x4x4	24	28	127
304	1875	375	0	0	14.0625	0	0.5	42.5	no	4x4x4	24	28	128
305	1875	375	0	0	14.0625	0	0.5	42.5	no	4x4x4	24	28	92
306	1277	574	0	0	0	0	0	42.5	no	5x5x5	48	28	27.1
307	1161.12	522.50	0	0	0	0.5	0	42.5	no	5x5x5	48	28	41.8
308	1578.95	789.47	0	0	0.00	0	0	42.5	yes	4x4x8	24	3	54.9
309	1578.95	789.47	0	0	0.00	0.1	0	42.5	yes	4x4x8	24	21	61
310	1578.95	789.47	0	0	0.00	0	0	42.5	yes	4x4x8	24	28	66.5
311	1578.95	789.47	0	0	0.00	0.1	0	42.5	yes	4x4x8	24	3	60.5
312	1578.95	789.47	0	0	0.00	0	0	42.5	yes	4x4x8	24	21	62.3
313	1578.95	789.47	0	0	0.00	0.1	0	42.5	yes	4x4x8	24	28	66.2
314	1578.95	789.47	0	0	0.00	0.3	0	42.5	yes	4x4x8	24	3	58.7
315	1578.95	789.47	0	0	0.00	0	0	42.5	yes	4x4x8	24	21	66
316	1578.95	789.47	0	0	0.00	0.3	0	42.5	yes	4x4x8	24	28	67.1
317	1578.95	789.47	0	0	0.00	0.5	0	42.5	yes	4x4x8	24	3	52
318	1578.95	789.47	0	0	0.00	0	0	42.5	yes	4x4x8	24	21	60.5
319	1578.95	789.47	0	0	0.00	0.5	0	42.5	yes	4x4x8	24	28	62.5
320	675.86	270.34	1351.7	0	0	0.02	0	42.5	yes	5x5x5	24	28	59.49
321	675.86	270.34	1351.7	0	0	0.04	0	42.5	yes	5x5x5	24	28	55.659
322	675.86	270.34	1351.7	0	0	0.08	0	42.5	yes	5x5x5	24	28	55.343
323	675.86	270.34	1351.7	0	0	0.1	0	42.5	yes	5x5x5	24	28	55.659

324	675.86	270.34	1351.7	0	0	0.3	0	42.5	yes	5x5x5	24	28	36.783
325	450	180	1720	0	4.95	0	0	42.5	no	4x4x8	24	28	65
326	450	180	1720	0	4.95	0.5	0	42.5	no	4x4x8	24	28	71.875
327	450	180	1720	0	4.95	0.5	0	42.5	no	4x4x8	24	28	76.25
328	1103.2	496.44	1654.8	0	1.43416	0	0	42.5	no	4x4x16	24	28	52.27
329	1103.2	496.44	1654.8	0	1.43416	0.5	0	42.5	yes	4x4x16	24	28	62.13

Table B1.2 Dataset 2 – FLEX

	Cement [kg/m^3]	Water [kg/m^3]	Fine aggregate [kg/m^3]	Coarse aggregate [kg/m^3]	Super plasticizer [kg/m^3]	Nanofiler wt%		Cement class	Functionalization	Cross-section [cm]	Demolding age [h]	Age [h]	Flexural strength [MPa]
						CNT	CNF						
#	min/max	min/max	min/max	min/max	min/max	min/max	min/max	0/1	0/1	0/1	min/max	min/max	min/max
1	1200	600	0	0	0	0	0	42.5	no	2x2x8	18	3	3.86
2	1200	600	0	0	0	0	0	42.5	no	2x2x8	18	7	4.89
3	1200	600	0	0	0	0	0	42.5	no	2x2x8	18	28	5.43
4	1200	600	0	0	0	0.048	0	42.5	no	2x2x8	18	3	4.35
5	1200	600	0	0	0	0.048	0	42.5	no	2x2x8	18	7	5.56
6	1200	600	0	0	0	0.048	0	42.5	no	2x2x8	18	28	6.181
7	1200	600	0	0	0	0.048	0	42.5	no	2x2x8	18	3	4.74
8	1200	600	0	0	0	0.048	0	42.5	no	2x2x8	18	7	5.83
9	1200	600	0	0	0	0.048	0	42.5	no	2x2x8	18	28	6.75
10	1200	600	0	0	0	0.008	0	42.5	no	2x2x8	18	3	5.055
11	1200	600	0	0	0	0.008	0	42.5	no	2x2x8	18	7	5.83
12	1200	600	0	0	0	0.008	0	42.5	no	2x2x8	18	28	6.64
13	1200	600	0	0	0	0.008	0	42.5	no	2x2x8	18	3	4.45
14	1200	600	0	0	0	0.008	0	42.5	no	2x2x8	18	7	5.61
15	1200	600	0	0	0	0.008	0	42.5	no	2x2x8	18	28	6.66
16	542	262.87	1490	0	0	0	0	42.5	no	4x4x16	24	3	2.18
17	542	262.87	1490	0	0	0	0	42.5	no	4x4x16	24	7	3.23
18	542	262.87	1490	0	0	0	0	42.5	no	4x4x16	24	28	5.9
19	542	262.87	1490	0	0	0.1	0	42.5	no	4x4x16	24	3	4.97
20	542	262.87	1490	0	0	0.1	0	42.5	no	4x4x16	24	7	5.83
21	542	262.87	1490	0	0	0.1	0	42.5	no	4x4x16	24	28	11.1
22	542	262.87	1490	0	0	0.5	0	42.5	no	4x4x16	24	3	2.35
23	542	262.87	1490	0	0	0.5	0	42.5	no	4x4x16	24	7	4.77
24	542	262.87	1490	0	0	0.5	0	42.5	no	4x4x16	24	28	8.6
25	542	262.87	1490	0	0	0	0.1	42.5	no	4x4x16	24	3	3.57
26	542	262.87	1490	0	0	0	0.1	42.5	no	4x4x16	24	7	7.69
27	542	262.87	1490	0	0	0	0.1	42.5	no	4x4x16	24	28	12.2
28	380	193.8	999.4	775.2	0	0	0	42.5	no	7x8x38	24	28	6.7
29	380	193.8	999.4	775.2	0	0.1	0	42.5	no	7x8x38	24	28	10
30	380	193.8	999.4	775.2	0	0	0.1	42.5	no	7x8x38	24	28	9.9
31	512.10	256.05	1536	0	2.048	0	0	42.5	no	4x4x16	24	28	5.9
32	512.10	256.05	1536	0	2.048	0.1	0	42.5	no	4x4x16	24	28	10.5
33	512.10	256.05	1536	0	2.048	0.1	0	42.5	no	4x4x16	24	28	10.2
34	512.10	256.05	1536	0	2.048	0.1	0	42.5	yes	4x4x16	24	28	12.9
35	512.10	256.05	1536	0	2.048	0.1	0	42.5	yes	4x4x16	24	28	10.6
36	512.10	256.05	1536	0	2.048	0.1	0	42.5	yes	4x4x16	24	28	8.9
37	1338.2	669.11	0	0	0	0.5	0	52.5	no	4x4x16	24	28	9.56
38	1338.2	669.11	0	0	0	0.5	0	52.5	yes	4x4x16	24	28	9.97
39	1363.6	681.82	0	0	0	0	0	42.5	no	4x4x16	24	28	10.2
40	1363.6	681.82	0	0	1.64	0.03	0	42.5	no	4x4x16	24	28	11.1
41	1363.6	681.82	0	0	4.36	0.08	0	42.5	no	4x4x16	24	28	10.8
42	1363.6	681.82	0	0	8.18	0.15	0	42.5	no	4x4x16	24	28	13.6
43	1363.6	681.82	0	0	13.64	0.25	0	42.5	no	4x4x16	24	28	16.1
44	1363.6	681.82	0	0	19.09	0.35	0	42.5	no	4x4x16	24	28	16.3
45	1363.6	681.82	0	0	27.27	0.5	0	42.5	no	4x4x16	24	28	16.4
46	359.20	179.6	1077	0	0	0	0	52.5	no	4x4x16	24	7	9.5
47	359.20	179.6	1077	0	0.00	0	0	52.5	no	4x4x16	24	28	10.35
48	359.20	179.6	1077	0	0.00	0	0	52.5	no	4x4x16	24	120	11.75
49	353.72	176.86	1061	0	1.03	0	0.25	52.5	no	4x4x16	24	7	9.8
50	353.72	176.86	1061	0	1.03	0	0.25	52.5	no	4x4x16	24	28	10.2
51	353.72	176.86	1061	0	1.03	0	0.25	52.5	no	4x4x16	24	120	11.3
52	348.32	174.16	1045	0	2.02	0	0.5	52.5	no	4x4x16	24	7	9.75
53	348.32	174.16	1045	0	2.02	0	0.5	52.5	no	4x4x16	24	28	10.4
54	348.32	174.16	1045	0	2.02	0	0.5	52.5	no	4x4x16	24	120	11.85

55	343.00	171.50	1029	0	2.95	0	0.75	52.5	no	4x4x16	24	7	10.1
56	343.00	171.50	1029	0	2.95	0	0.75	52.5	no	4x4x16	24	28	11.1
57	343.00	171.50	1029	0	2.95	0	0.75	52.5	no	4x4x16	24	120	11.8
58	337.77	168.88	1013	0	3.85	0	1	52.5	no	4x4x16	24	7	10
59	337.77	168.88	1013	0	3.85	0	1	52.5	no	4x4x16	24	28	11.3
60	337.77	168.88	1013	0	3.85	0	1	52.5	no	4x4x16	24	120	11.7
61	332.61	166.31	997.8	0	4.86	0	1.25	52.5	no	4x4x16	24	7	10.05
62	332.61	166.31	997.8	0	4.86	0	1.25	52.5	no	4x4x16	24	28	11.25
63	332.61	166.31	997.8	0	4.86	0	1.25	52.5	no	4x4x16	24	120	11.65
64	327.53	163.77	982.6	0	5.86	0	1.5	52.5	no	4x4x16	24	7	9.9
65	327.53	163.77	982.6	0	5.86	0	1.5	52.5	no	4x4x16	24	28	11.35
66	327.53	163.77	982.6	0	5.86	0	1.5	52.5	no	4x4x16	24	120	11.5
67	322.53	161.27	967.6	0	6.29	0	1.75	52.5	no	4x4x16	24	7	9.6
68	322.53	161.27	967.6	0	6.29	0	1.75	52.5	no	4x4x16	24	28	11.05
69	322.53	161.27	967.6	0	6.29	0	1.75	52.5	no	4x4x16	24	120	11.55
70	317.61	158.81	952.8	0	6.73	0	2	52.5	no	4x4x16	24	7	9.5
71	317.61	158.81	952.8	0	6.73	0	2	52.5	no	4x4x16	24	28	11.45
72	317.61	158.81	952.8	0	6.73	0	2	52.5	no	4x4x16	24	120	11.6
73	542	262.87	1490	0	0	0	0	42.5	no	4x4x16	24	3	4.1
74	542	262.87	1490	0	0	0	0	42.5	no	4x4x16	24	7	5.1
75	542	262.87	1490	0	0	0	0	42.5	no	4x4x16	24	28	5.9
76	542	262.87	1490	0	0	0.08	0	42.5	no	4x4x16	24	3	6.4
77	542	262.87	1490	0	0	0.08	0	42.5	no	4x4x16	24	7	7.5
78	542	262.87	1490	0	0	0.08	0	42.5	no	4x4x16	24	28	10.3
79	542	262.87	1490	0	0	0.1	0	42.5	no	4x4x16	24	3	6.9
80	542	262.87	1490	0	0	0.1	0	42.5	no	4x4x16	24	7	8.2
81	542	262.87	1490	0	0	0.1	0	42.5	no	4x4x16	24	28	11.1
82	542	262.87	1490	0	0	0.3	0	42.5	no	4x4x16	24	3	4.8
83	542	262.87	1490	0	0	0.3	0	42.5	no	4x4x16	24	7	6.7
84	542	262.87	1490	0	0	0.3	0	42.5	no	4x4x16	24	28	9.1
85	542	262.87	1490	0	0	0.5	0	42.5	no	4x4x16	24	3	4.7
86	542	262.87	1490	0	0	0.5	0	42.5	no	4x4x16	24	7	6.2
87	542	262.87	1490	0	0	0.5	0	42.5	no	4x4x16	24	28	8.6
88	664.80	232.68	1994	0	7.98	0	0	42.5	no	4x4x16	24	7	9.6
89	664.80	232.68	1994	0	7.98	0	0	42.5	no	4x4x16	24	28	10.3
90	664.80	232.68	1994	0	7.98	0	0	42.5	no	4x4x16	24	90	10.4
91	644.66	225.63	1934	0	7.74	0.1	0	42.5	no	4x4x16	24	7	11.8
92	644.66	225.63	1934	0	7.74	0.1	0	42.5	no	4x4x16	24	28	13.1
93	644.66	225.63	1934	0	7.74	0.1	0	42.5	no	4x4x16	24	90	13.3
94	654.65	229.13	1964	0	7.86	0.05	0	42.5	no	4x4x16	24	7	10.9
95	654.65	229.13	1964	0	7.86	0.05	0	42.5	no	4x4x16	24	28	12.7
96	654.65	229.13	1964	0	7.86	0.05	0	42.5	no	4x4x16	24	90	12
97	654.65	229.13	1964	0	7.86	0.05	0	42.5	no	4x4x16	24	7	12.1
98	654.65	229.13	1964	0	7.86	0.05	0	42.5	no	4x4x16	24	28	13.3
99	654.65	229.13	1964	0	7.86	0.05	0	42.5	no	4x4x16	24	90	13.6
100	525.56	236.50	709.5	0	0.79	0	0	42.5	no	4x4x16	24	7	7.1
101	525.56	236.50	709.5	0	0.79	0	0	42.5	no	4x4x16	24	28	8.9
102	525.56	236.50	709.5	0	0.79	0	0	42.5	no	4x4x16	24	90	9.6
103	509.64	229.34	688	0	0.76	0.1	0	42.5	no	4x4x16	24	7	9.3
104	509.64	229.34	688	0	0.76	0.1	0	42.5	no	4x4x16	24	28	10.6
105	509.64	229.34	688	0	0.76	0.1	0	42.5	no	4x4x16	24	90	11.1
106	517.54	232.89	699	0	0.78	0.05	0	42.5	no	4x4x16	24	7	7.9
107	517.54	232.89	699	0	0.78	0.05	0	42.5	no	4x4x16	24	28	9.9
108	517.54	232.89	699	0	0.78	0.05	0	42.5	no	4x4x16	24	90	10.2
109	517.54	232.89	699	0	0.78	0.05	0	42.5	no	4x4x16	24	7	9.3
110	517.54	232.89	699	0	0.78	0.05	0	42.5	no	4x4x16	24	28	10.5
111	517.54	232.89	699	0	0.78	0.05	0	42.5	no	4x4x16	24	90	10.6
112	512.10	256.05	1536	0	0	0	0	42.5	no	4x4x16	24	7	6.8
113	512.10	256.05	1536	0	0	0	0	42.5	no	4x4x16	24	28	8.3
114	512.10	256.05	1536	0	0	0	0	42.5	no	4x4x16	24	90	9.2
115	496.59	248.29	1490	0	0	0.1	0	42.5	no	4x4x16	24	7	9
116	496.59	248.29	1490	0	0	0.1	0	42.5	no	4x4x16	24	28	9.9
117	496.59	248.29	1490	0	0	0.1	0	42.5	no	4x4x16	24	90	10.2
118	504.28	252.14	1513	0	0	0.05	0	42.5	no	4x4x16	24	7	7.4
119	504.28	252.14	1513	0	0	0.05	0	42.5	no	4x4x16	24	28	8.8
120	504.28	252.14	1513	0	0	0.05	0	42.5	no	4x4x16	24	90	9.2
121	504.28	252.14	1513	0	0	0.05	0	42.5	no	4x4x16	24	7	8.2

122	504.28	252.14	1513	0	0	0.05	0	42.5	no	4x4x16	24	28	9.8
123	504.28	252.14	1513	0	0	0.05	0	42.5	no	4x4x16	24	90	10.1
124	499.30	274.62	1498	0	0	0	0	42.5	no	4x4x16	24	7	6.5
125	499.30	274.62	1498	0	0	0	0	42.5	no	4x4x16	24	28	7.6
126	499.30	274.62	1498	0	0	0	0	42.5	no	4x4x16	24	90	8.4
127	484.17	266.30	1452	0	0	0.1	0	42.5	no	4x4x16	24	7	8.3
128	484.17	266.30	1452	0	0	0.1	0	42.5	no	4x4x16	24	28	9.2
129	484.17	266.30	1452	0	0	0.1	0	42.5	no	4x4x16	24	90	9.3
130	491.68	270.42	1475	0	0	0.05	0	42.5	no	4x4x16	24	7	7.2
131	491.68	270.42	1475	0	0	0.05	0	42.5	no	4x4x16	24	28	7.8
132	491.68	270.42	1475	0	0	0.05	0	42.5	no	4x4x16	24	90	8.5
133	491.68	270.42	1475	0	0	0.05	0	42.5	no	4x4x16	24	7	7.8
134	491.68	270.42	1475	0	0	0.05	0	42.5	no	4x4x16	24	28	8.8
135	491.68	270.42	1475	0	0	0.05	0	42.5	no	4x4x16	24	90	9.3
136	1500	495	0	0	0	0	0	42.5	no	4x4x16	24	28	4
137	1500	495	0	0	0	0.025	0	42.5	no	4x4x16	24	28	4.3
138	1500	495	0	0	0	0.05	0	42.5	no	4x4x16	24	28	4.6
139	1500	495	0	0	0	0.1	0	42.5	no	4x4x16	24	28	5.2
140	1500	495	0	0	0	0.2	0	42.5	no	4x4x16	24	28	5.6
141	1200	600	0	0	0	0	0	42.5	no	4x4x16	24	28	7.15
142	1200	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	5.21
143	1200	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	6.35
144	1200	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	6
145	1200	600	0	0	0	0.08	0	42.5	no	4x4x16	24	28	7.37
146	1200	600	0	0	0	0.1	0	42.5	yes	4x4x16	48	28	7.09
147	1200	600	0	0	0	0.1	0	42.5	yes	4x4x16	48	28	7.09
148	1500	600	0	0	0	0	0	42.5	no	4x4x16	24	28	7.04
149	1500	600	0	0	0	0.05	0	42.5	no	4x4x16	24	28	6.75
150	1500	600	0	0	0	0.05	0	42.5	no	4x4x16	24	28	7.83
151	1500	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	7.25
152	1500	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	8.25
153	1579	789.5	0	0	0	0	0	52.5	yes	2.5x4x8	24	28	5.52
154	1579	789.5	0	0	0	0.05	0	52.5	yes	2.5x4x8	24	28	10.47
155	1579	789.5	0	0	0	0.05	0	52.5	yes	2.5x4x8	24	28	12.61
156	1579	789.5	0	0	0	0.05	0	52.5	yes	2.5x4x8	24	28	8.57
157	496	272.8	1488	0	0	0	0	42.5	no	4x4x16	24	28	3.28
158	496	272.8	1488	0	0	0.05	0	42.5	no	4x4x16	24	28	3.31
159	496	272.8	1488	0	0	0.1	0	42.5	no	4x4x16	24	28	3.5
160	496	272.8	1488	0	0	0.15	0	42.5	no	4x4x16	24	28	4.2
161	400	160	660	1168	2.4	0	0	52.5	no	15x15x15	24	7	2.68
162	400	160	660	1168	2.4	0	0	52.5	no	15x15x15	24	28	4.85
163	400	160	660	1168	2.4	0.05	0	52.5	yes	15x15x15	24	7	3.61
164	400	160	660	1168	2.4	0.05	0	52.5	yes	15x15x15	24	28	6.25
165	400	160	660	1168	2.4	0.07	0	52.5	yes	15x15x15	24	7	3.98
166	400	160	660	1168	2.4	0.07	0	52.5	yes	15x15x15	24	28	7.37
167	400	160	660	1168	2.4	0.08	0	52.5	yes	15x15x15	24	7	4.57
168	400	160	660	1168	2.4	0.08	0	52.5	yes	15x15x15	24	28	9.2
169	400	160	660	1168	2.4	0.1	0	52.5	yes	15x15x15	24	7	4.2
170	400	160	660	1168	2.4	0.1	0	52.5	yes	15x15x15	24	28	8.42
171	422	147	621	1284	5.06	0	0	52.5	no	15x15x15	24	7	3.04
172	422	147	621	1284	5.06	0	0	52.5	no	15x15x15	24	28	5.2
173	422	147	621	1284	5.06	0.05	0	52.5	yes	15x15x15	24	7	4.24
174	422	147	621	1284	5.06	0.05	0	52.5	yes	15x15x15	24	28	6.57
175	422	147	621	1284	5.06	0.07	0	52.5	yes	15x15x15	24	7	4.52
176	422	147	621	1284	5.06	0.07	0	52.5	yes	15x15x15	24	28	7.82
177	422	147	621	1284	5.06	0.08	0	52.5	yes	15x15x15	24	7	5.12
178	422	147	621	1284	5.06	0.08	0	52.5	yes	15x15x15	24	28	9.64
179	422	147	621	1284	5.06	0.1	0	52.5	yes	15x15x15	24	7	4.61
180	422	147	621	1284	5.06	0.1	0	52.5	yes	15x15x15	24	28	8.32
181	504	142	683	1108	4.7	0	0	52.5	no	15x15x15	24	7	3.12
182	504	142	683	1108	4.7	0	0	52.5	no	15x15x15	24	28	5.35
183	504	142	683	1108	4.7	0.05	0	52.5	yes	15x15x15	24	7	4.35
184	504	142	683	1108	4.7	0.05	0	52.5	yes	15x15x15	24	28	6.68
185	504	142	683	1108	4.7	0.07	0	52.5	yes	15x15x15	24	7	4.68
186	504	142	683	1108	4.7	0.07	0	52.5	yes	15x15x15	24	28	7.91
187	504	142	683	1108	4.7	0.08	0	52.5	yes	15x15x15	24	7	6.54
188	504	142	683	1108	4.7	0.08	0	52.5	yes	15x15x15	24	28	9.74

189	504	142	683	1108	4.7	0.1	0	52.5	yes	15x15x15	24	7	4.62
190	504	142	683	1108	4.7	0.1	0	52.5	yes	15x15x15	24	28	8.21
191	1579	789.5	0	0	0	0	0	42.5	yes	4x4x16	24	3	9.47
192	1579	789.5	0	0	0	0.1	0	42.5	yes	4x4x16	24	21	9.65
193	1579	789.5	0	0	0	0	0	42.5	yes	4x4x16	24	28	10.1
194	1579	789.5	0	0	0	0.1	0	42.5	yes	4x4x16	24	3	10.35
195	1579	789.5	0	0	0	0	0	42.5	yes	4x4x16	24	21	10.45
196	1579	789.5	0	0	0	0.1	0	42.5	yes	4x4x16	24	28	11.4
197	1579	789.5	0	0	0	0.3	0	42.5	yes	4x4x16	24	3	10.5
198	1579	789.5	0	0	0	0	0	42.5	yes	4x4x16	24	21	11.1
199	1579	789.5	0	0	0	0.3	0	42.5	yes	4x4x16	24	28	11.7
200	1579	789.5	0	0	0	0.5	0	42.5	yes	4x4x16	24	3	8.4
201	1579	789.5	0	0	0	0	0	42.5	yes	4x4x16	24	21	9.55
202	1579	789.5	0	0	0	0.5	0	42.5	yes	4x4x16	24	28	10.3
203	450	180	1720	0	4.95	0	0	42.5	no	4x4x16	24	28	7.5
204	450	180	1720	0	4.95	0.5	0	42.5	no	4x4x16	24	28	10.1
205	450	180	1720	0	4.95	0.5	0	42.5	no	4x4x16	24	28	8.2
206	1103.2	496.44	1655	0	1.43416	0	0	42.5	no	4x4x16	24	28	6.69
207	1103.2	496.44	1655	0	1.43416	0.5	0	42.5	yes	4x4x16	24	28	8.37

Table B1.3 Dataset 3 - RESIST

	Cement [kg/m^3]	Water [kg/m^3]	Fine aggregate [kg/m^3]	Coarse aggregate [kg/m^3]	Super plasticizer [kg/m^3]	Nanofiller wt%		Cement class	Function alization	Cross-section [cm]	Probe distance [cm]	Demolding age [h]	Age [h]	Volume resistivity [Ω·cm]
						CNT	CNF							
#	min/max	min/max	min/max	min/max	min/max	min/max		0/1	0/1	0/1	min/max	min/max	0/1	min/max
1	1277	574	0	0	0	0	0	42.5	yes	5x5x5	4	48	28	76862.18
2	1270.5	571.88	0	0	0	0.25	0	42.5	yes	5x5x5	4	48	28	67699.31
3	1264.8	569.15	0	0	0	0.5	0	42.5	yes	5x5x5	4	48	28	56248.82
4	1258.7	566.43	0	0	0	0.75	0	42.5	yes	5x5x5	4	48	28	56248.82
5	1252.8	563.75	0	0	0	1	0	42.5	yes	5x5x5	4	48	28	6058.77
6	1241	558.45	0	0	0	1.5	0	42.5	yes	5x5x5	4	48	28	6769.93
7	654	294.3	1308	0	0	0	0	42.5	yes	5x5x5	4	48	28	100000
8	652.31	293.54	1304.62	0	0	0.25	0	42.5	yes	5x5x5	4	48	28	98522.17
9	650.63	292.78	1301.26	0	0	0.5	0	42.5	yes	5x5x5	4	48	28	67699.31
10	648.96	292.03	1297.92	0	0	0.75	0	42.5	yes	5x5x5	4	48	28	51170.79
11	647.30	291.29	1294.6	0	0	1	0	42.5	yes	5x5x5	4	48	28	71990.61
12	644.02	289.81	1288.04	0	0	1.5	0	42.5	yes	5x5x5	4	48	28	62419.63
13	524	235.8	951	638	2.62	0	0	42.5	yes	5x5x5	4	48	28	689655.17
14	523	235.35	946.61	638.05	7.84	0.25	0	42.5	yes	5x5x5	4	48	28	562382.25
15	522	234.89	944.79	636.82	7.83	0.5	0	42.5	yes	5x5x5	4	48	28	541978.98
16	521	234.44	942.97	635.60	7.81	0.75	0	42.5	yes	5x5x5	4	48	28	67699.31
17	520	233.99	941.16	634.38	7.80	1	0	42.5	yes	5x5x5	4	48	28	7686.22
18	518	233.1	937.58	631.96	7.77	1.5	0	42.5	yes	5x5x5	4	48	28	6058.77
19	1277	574	0	0	0	0	0	42.5	yes	5x5x5	4	48	28	76862.18
20	1270.8	571.88	0	0	0	0	0.25	42.5	yes	5x5x5	4	48	28	76599
21	1264.8	569.15	0	0	0	0	0.5	42.5	yes	5x5x5	4	48	28	69779.29
22	1258.7	566.43	0	0	0	0	0.75	42.5	yes	5x5x5	4	48	28	68259.39
23	1252.8	563.75	0	0	0	0	1	42.5	yes	5x5x5	4	48	28	67699.31
24	1241	558.45	0	0	0	0	1.5	42.5	yes	5x5x5	4	48	28	64956.15
25	1229.4	553.25	0	0	0	0	2	42.5	yes	5x5x5	4	48	28	64956.15
26	654	294.3	1308	0	0	0	0	42.5	yes	5x5x5	4	48	28	97077.67
27	652.31	293.54	1304.62	0	0	0	0.25	42.5	yes	5x5x5	4	48	28	89253.84
28	650.63	292.78	1301.26	0	0	0	0.5	42.5	yes	5x5x5	4	48	28	86918.73
29	648.96	292.03	1297.92	0	0	0	0.75	42.5	yes	5x5x5	4	48	28	94321.83
30	647.30	291.29	1294.6	0	0	0	1	42.5	yes	5x5x5	4	48	28	95693.78
31	644.02	289.81	1288.04	0	0	0	1.5	42.5	yes	5x5x5	4	48	28	85795.67
32	640.73	288.33	1281.46	0	0	0	2	42.5	yes	5x5x5	4	48	28	84732.84
33	524	235.8	951	638	2.62	0	0	42.5	yes	5x5x5	4	48	28	624196.35
34	523	235.35	946.61	638.05	7.84	0	0.25	42.5	yes	5x5x5	4	48	28	536912.75
35	522	234.89	944.79	636.82	7.83	0	0.5	42.5	yes	5x5x5	4	48	28	541978.98
36	521	234.44	942.97	635.60	7.81	0	0.75	42.5	yes	5x5x5	4	48	28	505786.19
37	520	233.99	941.16	634.38	7.80	0	1	42.5	yes	5x5x5	4	48	28	521259.57
38	518	233.10	937.58	631.96	7.77	0	1.5	42.5	yes	5x5x5	4	48	28	97077.67
39	516	232.21	934.01	629.56	7.74	0	2	42.5	yes	5x5x5	4	48	28	85795.67
40	1277	574	0	0	0	0	0	42.5	no	5x5x5	4	48	28	5405.41
41	1270.6	571.8	0	0	0	0.25	0	42.5	no	5x5x5	4	48	28	5555.56

42	1264.6	569.1	0	0	0	0.5	0	42.5	no	5x5x5	4	48	28	526.32
43	1258.6	566.38	0	0	0	0.75	0	42.5	no	5x5x5	4	48	28	512.82
44	1252.7	563.71	0	0	0	1	0	42.5	no	5x5x5	4	48	28	769.23
45	1241	558.45	0	0	0	1.5	0	42.5	no	5x5x5	4	48	28	666.67
46	654	294	1308	0	0	0	0	42.5	no	5x5x5	4	48	28	5025.13
47	652.34	293.55	1304.67	0	0	0.25	0	42.5	no	5x5x5	4	48	28	5128.21
48	650.68	292.81	1301.36	0	0	0.5	0	42.5	no	5x5x5	4	48	28	512.82
49	649	292.05	1298	0	0	0.75	0	42.5	no	5x5x5	4	48	28	518.13
50	647.33	291.3	1294.67	0	0	1	0	42.5	no	5x5x5	4	48	28	5555.56
51	644.02	289.81	1288	0	0	1.5	0	42.5	no	5x5x5	4	48	28	7692.31
52	524	234	951	638	2.62	0	0	42.5	no	5x5x5	4	48	28	54054.05
53	523	235.33	946.55	638	7.84	0.25	0	42.5	no	5x5x5	4	48	28	100000
54	522	234.87	944.7	636.75	7.83	0.5	0	42.5	no	5x5x5	4	48	28	5128.21
55	521	234.42	942.9	635.55	7.81	0.75	0	42.5	no	5x5x5	4	48	28	5555.56
56	520	233.98	941.13	634.35	7.80	1	0	42.5	no	5x5x5	4	48	28	526.32
57	518	233.09	937.56	631.95	7.77	1.5	0	42.5	no	5x5x5	4	48	28	571.43
58	1578.9	789.48	0	0	0	0		42.5	yes	2x2x8	6	24	28	7700000
59	1578.9	789.48	0	0	0	0.048	0	42.5	yes	2x2x8	6	24	28	360000
60	1578.9	789.48	0	0	0	0.1	0	42.5	yes	2x2x8	6	24	28	260000
61	1578.9	789.48	0	0	0	0	0.048	42.5	yes	2x2x8	6	24	28	370000
62	1578.9	789.48	0	0	0	0	0.1	42.5	yes	2x2x8	6	24	28	570000
63	542	262.87	1490.5	0	0	0	0	42.5	no	2x2x8	6	24	3	75600
64	542	262.87	1490.5	0	0	0	0	42.5	no	2x2x8	6	24	7	75600
65	542	262.87	1490.5	0	0	0	0	42.5	no	2x2x8	6	24	28	75600
66	542	262.87	1490.5	0	0	0.1	0	42.5	no	2x2x8	6	24	3	55200
67	542	262.87	1490.5	0	0	0.1	0	42.5	no	2x2x8	6	24	7	55200
68	542	262.87	1490.5	0	0	0.1	0	42.5	no	2x2x8	6	24	28	55200
69	542	262.87	1490.5	0	0	0.5	0	42.5	no	2x2x8	6	24	3	63600
70	542	262.87	1490.5	0	0	0.5	0	42.5	no	2x2x8	6	24	7	63600
71	542	262.87	1490.5	0	0	0.5	0	42.5	no	2x2x8	6	24	28	63600
72	542	262.87	1490.5	0	0	0	0.1	42.5	no	2x2x8	6	24	3	64800
73	542	262.87	1490.5	0	0	0	0.1	42.5	no	2x2x8	6	24	7	64800
74	542	262.87	1490.5	0	0	0	0.1	42.5	no	2x2x8	6	24	28	64800
75	1071.4	642.86	0	0	0	0.1	0	42.5	yes	5x5x5	1	24	28	9810
76	1338.2	669.11	0	0	0	0.5	0	52.5	no	4x4x16	6	24	28	145.83
77	1338.2	669.11	0	0	0	0.5	0	52.5	yes	4x4x16	6	24	28	129.17
78	1200	600	0	0	2	0	0.5	52.5	no	4x4x16	12	24	7	1340
79	1200	600	0	0	1.8	0	0.5	52.5	no	4x4x16	12	24	28	1340
80	1200	600	0	0	3.6	0	1	52.5	no	4x4x16	12	24	7	1292.70
81	1200	600	0	0	3.6	0	1	52.5	no	4x4x16	12	24	28	1292.70
82	1200	600	0	0	6.6	0	2	52.5	no	4x4x16	12	24	7	1118.20
83	1200	600	0	0	6.6	0	2	52.5	no	4x4x16	12	24	28	1118.2
84	448	191	877	838	0.62	0	1	42.5	yes	20x10	9	24	28	84100
85	448	191	877	838	0.71	0	1.5	42.5	yes	20x10	9	24	28	59300
86	478	191	1008	902	0.49	0	1	42.5	no	20x10	9	24	28	20100
87	478	191	1008	902	0.85	0	1.5	42.5	no	20x10	9	24	28	10000
88	478	191	1008	902	1.02	0	2	42.5	no	20x10	9	24	28	6000
89	4780	191	1008	902	1.56	0	2.5	42.5	no	20x10	9	24	28	5400
90	478	191	1008	902	0.31	0	0.7	42.5	no	20x10	9	24	28	17500
91	478	191	1008	902	0.49	0	1	42.5	no	20x10	9	24	28	20000
92	478	191	1008	902	0.85	0	1.5	42.5	no	20x10	9	24	28	9600
93	478	191	1008	902	1.02	0	2	42.5	no	20x10	9	24	28	10000
94	478	191	1008	902	1.56	0	2.5	42.5	no	20x10	9	24	28	5400
95	1277	574	0	0	0	0	0	42.5	yes	5x5x5	1	24	28	604.7
96	1274.5	573.55	0	0	0	0.1	0	42.5	yes	5x5x5	1	24	28	550.3
97	1264.8	569.15	0	0	0	0.5	0	42.5	yes	5x5x5	1	24	28	249.8
98	1252.8	563.75	0	0	0	1	0	42.5	yes	5x5x5	1	24	28	141.3
99	1241	558.45	0	0	0	1.5	0	42.5	yes	5x5x5	1	24	28	119.5
100	1071.4	642.86	0	0	0	0	0	42.5	yes	5x5x5	1	24	28	574.9
101	1069.4	641.64	0	0	0	0.1	0	42.5	yes	5x5x5	1	24	28	523.1
102	1061.8	637.12	0	0	0	0.5	0	42.5	yes	5x5x5	1	24	28	225.6
103	1031.9	619.17	0	0	0	1	0	42.5	yes	5x5x5	1	24	28	127.2
104	1002.8	601.72	0	0	0	1.5	0	42.5	yes	5x5x5	1	24	28	108.2
105	974.60	584.76	0	0	0	2	0	42.5	yes	5x5x5	1	24	28	77.25
106	897.91	538.74	628.54	0	0	0	0	42.5	yes	5x5x5	1	24	28	1941.9
107	887.63	532.58	621.34	0	0	0.1	0	42.5	yes	5x5x5	1	24	28	1842.5
108	877.47	526.48	614.23	0	0	0.5	0	42.5	yes	5x5x5	1	24	28	1057

109	867.43	520.45	607.2	0	0	1	0	42.5	yes	5x5x5	1	24	28	552.3
110	857.5	514.5	600.25	0	0	1.5	0	42.5	yes	5x5x5	1	24	28	314.8
111	847.68	508.61	593.38	0	0	2	0	42.5	yes	5x5x5	1	24	28	206.6
112	1040.3	468.17	728.26	0	0	0	0	42.5	yes	5x5x5	1	24	28	1502.3
113	1028.5	462.81	719.92	0	0	0.1	0	42.5	yes	5x5x5	1	24	28	1396.6
114	1016.7	457.51	711.68	0	0	0.5	0	42.5	yes	5x5x5	1	24	28	827.2
115	1005	452.27	703.53	0	0	1	0	42.5	yes	5x5x5	1	24	28	421.2
116	993.54	447.1	695.48	0	0	1.5	0	42.5	yes	5x5x5	1	24	28	273.4
117	899.93	539.95	629.95	0	0	0	0	42.5	yes	5x5x5	1	24	28	1463.9
118	889.63	533.77	622.74	0	0	0.1	0	42.5	yes	5x5x5	1	24	28	1363.6
119	879.44	527.67	615.61	0	0	0.5	0	42.5	yes	5x5x5	1	24	28	800
120	869.38	521.62	608.56	0	0	1	0	42.5	yes	5x5x5	1	24	28	415.5
121	859.42	515.65	601.6	0	0	1.5	0	42.5	yes	5x5x5	1	24	28	265.1
122	849.59	509.75	594.7	0	0	2	0	42.5	yes	5x5x5	1	24	28	132.7
123	1875	375	0	0	14.06	0	0	42.5	no	4x4x4	2	24	28	7200
124	1875	375	0	0	14.06	0.1	0	42.5	no	4x4x4	2	24	28	6900
125	1875	375	0	0	14.06	0.5	0	42.5	no	4x4x4	2	24	28	3200
126	1875	375	0	0	14.06	1	0	42.5	no	4x4x4	2	24	28	1000
127	1875	375	0	0	14.06	0	0	42.5	no	4x4x4	2	24	28	7200
128	1875	375	0	0	14.06	0	0.1	42.5	no	4x4x4	2	24	28	4000
129	1875	375	0	0	14.06	0	0.5	42.5	no	4x4x4	2	24	28	600
130	1875	375	0	0	14.06	0	0.5	42.5	no	4x4x4	2	24	28	350
131	1277	574	0	0	0	0	0	42.5	no	5x5x5	4	48	28	80645.16
132	1270.6	571.79	0	0	0	0.25	0	42.5	no	5x5x5	4	48	28	5128.21
133	1161.1	522.5	0	0	0	0.5	0	42.5	no	5x5x5	4	48	28	5882.35
134	1258.6	566.38	0	0	0	0.75	0	42.5	no	5x5x5	4	48	28	10000.00
135	1252.7	563.71	0	0	0	1	0	42.5	no	5x5x5	4	48	28	625.00
136	1241	558.45	0	0	0	1.5	0	42.5	no	5x5x5	4	48	28	526.32
137	524	235.8	943.2	639.28	2.62	0	0	42.5	no	5x5x5	4	48	28	1000000
138	523	235.33	941.32	638	1.07	0.25	0	42.5	no	5x5x5	4	48	28	54054.05
139	522	234.87	939.47	636.75	1.07	0.5	0	42.5	no	5x5x5	4	48	28	55555.56
140	521	234.42	937.7	635.55	1.07	0.75	0	42.5	no	5x5x5	4	48	28	5263.16
141	520	233.98	935.93	634.35	1.07	1	0	42.5	no	5x5x5	4	48	28	526.32
142	518	233.1	932.38	631.95	1.06	1.5	0	42.5	no	5x5x5	4	48	28	666.67
143	1578.9	789.48	0	0	0	0	0	42.5	yes	4x4x16	4	24	3	6000
144	1578.9	789.48	0	0	0	0	0	42.5	yes	4x4x16	4	24	7	11100
145	1578.9	789.48	0	0	0	0	0	42.5	yes	4x4x16	4	24	14	13300
146	1578.9	789.48	0	0	0	0.1	0	42.5	yes	4x4x16	4	24	21	13600
147	1578.9	789.48	0	0	0	0	0	42.5	yes	4x4x16	4	24	28	16000
148	1578.9	789.48	0	0	0	0.1	0	42.5	yes	4x4x16	4	24	3	5000
149	1578.9	789.48	0	0	0	0	0	42.5	yes	4x4x16	4	24	7	9000
150	1578.9	789.48	0	0	0	0.1	0	42.5	yes	4x4x16	4	24	14	10500
151	1578.9	789.48	0	0	0	0	0	42.5	yes	4x4x16	4	24	21	11900
152	1578.9	789.48	0	0	0	0.1	0	42.5	yes	4x4x16	4	24	28	13000
153	1578.9	789.48	0	0	0	0.3	0	42.5	yes	4x4x16	4	24	3	4500
154	1578.9	789.48	0	0	0	0	0	42.5	yes	4x4x16	4	24	7	8500
155	1578.9	789.48	0	0	0	0.1	0	42.5	yes	4x4x16	4	24	14	10300
156	1578.9	789.48	0	0	0	0	0	42.5	yes	4x4x16	4	24	21	10400
157	1578.9	789.48	0	0	0	0.3	0	42.5	yes	4x4x16	4	24	28	12700
158	1578.9	789.48	0	0	0	0.5	0	42.5	yes	4x4x16	4	24	3	3200
159	1578.9	789.48	0	0	0	0	0	42.5	yes	4x4x16	4	24	7	6000
160	1578.9	789.48	0	0	0	0.1	0	42.5	yes	4x4x16	4	24	14	7500
161	1578.9	789.48	0	0	0	0	0	42.5	yes	4x4x16	4	24	21	7300
162	1578.9	789.48	0	0	0	0.5	0	42.5	yes	4x4x16	4	24	28	9500
163	1363.6	545.44	0	0	3.41	0.1	0	42.5	no	5x5x5	1.5	24	28	11500
164	1363.6	545.44	0	0	3.41	0.5	0	42.5	no	5x5x5	1.5	24	28	11100
165	1363.6	681.82	0	0	0	0.05	0	52.5	no	5x5x5	1	24	28	50000.
166	1363.6	681.82	0	0	0	0.1	0	52.5	no	5x5x5	1	24	28	39215.69
167	1363.6	681.82	0	0	0	0.5	0	52.5	no	5x5x5	1	24	28	21505.38
168	1277	574	0	0	0	0	0	42.5	no	5x5x5	4	24	28	39000
169	1270.6	571.8	0	0	0	0.25	0	42.5	no	5x5x5	4	24	28	20000
170	1161.1	522.5	0	0	0	0.5	0	42.5	no	5x5x5	4	24	28	16000
171	1258.6	566.38	0	0	0	0.75	0	42.5	no	5x5x5	4	24	28	15500
172	1252.7	563.71	0	0	0	1	0	42.5	no	5x5x5	4	24	28	1600
173	1241	558.45	0	0	0	1.5	0	42.5	no	5x5x5	4	24	28	2700
174	654	294	1308	0	0	0	0	42.5	no	5x5x5	4	24	28	50000
175	652.34	293.55	1304.67	0	6.52	0.25	0	42.5	no	5x5x5	4	24	28	30000

176	650.68	292.80	1301.36	0	6.51	0.5	0	42.5	no	5x5x5	4	24	28	20000
177	649.00	292.05	1298	0	6.49	0.75	0	42.5	no	5x5x5	4	24	28	7000
178	647.33	291.3	1294.66	0	6.47	1	0	42.5	no	5x5x5	4	24	28	18000
179	644.02	289.81	1288.04	0	6.44	1.5	0	42.5	no	5x5x5	4	24	28	10000
180	524	234	951	638	2.62	0	0	42.5	no	5x5x5	4	24	28	60000
181	523	235.33	941.32	627.55	7.87	0.25	0	42.5	no	5x5x5	4	24	28	50000
182	522	234.87	939.47	626.31	7.855	0.5	0	42.5	no	5x5x5	4	24	28	38000
183	521	234.42	937.7	625.13	7.84	0.75	0	42.5	no	5x5x5	4	24	28	19000
184	520	233.98	935.93	623.95	7.825	1	0	42.5	no	5x5x5	4	24	28	4000
185	518	233.1	932.38	621.59	7.795	1.5	0	42.5	no	5x5x5	4	24	28	2000
186	1277	574	0	0	0	0	0	42.5	no	5x5x5	4	24	28	50000
187	1270.6	571.79	0	0	0	0	0.25	42.5	no	5x5x5	4	24	28	47000
188	1161.1	522.50	0	0	0	0	0.5	42.5	no	5x5x5	4	24	28	38000
189	1258.6	566.38	0	0	0	0	0.75	42.5	no	5x5x5	4	24	28	37000
190	1252.7	563.71	0	0	0	0	1	42.5	no	5x5x5	4	24	28	35000
191	1241	558.45	0	0	0	0	1.5	42.5	no	5x5x5	4	24	28	30000
192	1229.3	558.45	0	0	0	0	2	42.5	no	5x5x5	4	24	28	31000
193	654	294	1308	0	0	0	0	42.5	no	5x5x5	4	24	28	97000
194	652.34	293.55	1304.67	0	6.52	0	0.25	42.5	no	5x5x5	4	24	28	87000
195	650.68	292.81	1301.36	0	6.51	0	0.5	42.5	no	5x5x5	4	24	28	82000
196	649	292.05	1298	0	6.49	0	0.75	42.5	no	5x5x5	4	24	28	92000
197	647.33	291.3	1294.66	0	6.47	0	1	42.5	no	5x5x5	4	24	28	96000
198	644.02	289.81	1288.03	0	6.44	0	1.5	42.5	no	5x5x5	4	24	28	62000
199	640.80	289.81	1288.03	0	6.44	0	2	42.5	no	5x5x5	4	24	28	60000
200	524	234	951	638	2.62	0	0	42.5	no	5x5x5	4	24	28	240000
201	523	235.33	941.32	627.55	7.87	0	0.25	42.5	no	5x5x5	4	24	28	145000
202	522	234.87	939.47	626.31	7.855	0	0.5	42.5	no	5x5x5	4	24	28	170000
203	521	234.42	937.7	625.13	7.84	0	0.75	42.5	no	5x5x5	4	24	28	100000
204	520	233.98	935.93	623.95	7.825	0	1	42.5	no	5x5x5	4	24	28	130000
205	518	233.09	932.38	621.59	7.795	0	1.5	42.5	no	5x5x5	4	24	28	99000
206	516	233.09	932.38	621.59	7.795	0	2	42.5	no	5x5x5	4	24	28	65000
207	1277	574	0	0	0	0	0	42.5	no	5x5x5	4	24	28	50000
208	1270.6	571.79	0	0	0	0.25	0	42.5	no	5x5x5	4	24	28	35000
209	1161.1	522.50	0	0	0	0.5	0	42.5	no	5x5x5	4	24	28	18000
210	1258.6	566.38	0	0	0	0.75	0	42.5	no	5x5x5	4	24	28	21000
211	1252.7	563.71	0	0	0	1	0	42.5	no	5x5x5	4	24	28	1800
212	1241	558.45	0	0	0	1.5	0	42.5	no	5x5x5	4	24	28	3200
213	654	294	1308	0	0	0	0	42.5	no	5x5x5	4	24	28	90000
214	652.34	293.55	1304.67	0	6.52	0.25	0	42.5	no	5x5x5	4	24	28	80000
215	650.68	292.81	1301.36	0	6.51	0.5	0	42.5	no	5x5x5	4	24	28	40000
216	649	292.05	1298	0	6.49	0.75	0	42.5	no	5x5x5	4	24	28	11000
217	524	234	951	638	2.62	0	0	42.5	no	5x5x5	4	24	28	220000
218	523	235.33	941.32	627.55	7.87	0.25	0	42.5	no	5x5x5	4	24	28	160000
219	522	234.87	939.47	626.31	7.855	0.5	0	42.5	no	5x5x5	4	24	28	130000
220	521	234.42	937.7	625.13	7.84	0.75	0	42.5	no	5x5x5	4	24	28	45000
221	520	233.98	935.93	623.95	7.825	1	0	42.5	no	5x5x5	4	24	28	5500
222	518	233.09	932.38	621.59	7.795	1.5	0	42.5	no	5x5x5	4	24	28	2000
223	1277	575	0	0	6.3	1	0	42.5	no	5x5x5	4	24	28	614.3

Table B1.4 Dataset 4 – COMP+FLEX

	Cement [kg/m^3]	Water [kg/m^3]	Fine aggregate [kg/m^3]	Coarse aggregate [kg/m^3]	Super plasticizer [kg/m^3]	Nanofiller wt%		Cement class	Function alization	Demolding age [h]	Age [h]	Compressive strength [MPa]	Flexural strength [MPa]
						CNT	CNF						
#	min/max	min/max	min/max	min/max	min/max	min/max		0/1	0/1	min/max	min/max	min/max	min/max
1	542	262.87	1490.5	0	0	0	0	42.5	no	24	3	19.8	2.18
2	542	262.87	1490.5	0	0	0	0	42.5	no	24	7	25.6	3.23
3	542	262.87	1490.5	0	0	0	0	42.5	no	24	28	31.7	5.9
4	542	262.87	1490.5	0	0	0.1	0	42.5	no	24	3	22.6	4.97
5	542	262.87	1490.5	0	0	0.1	0	42.5	no	24	7	26.5	5.83
6	542	262.87	1490.5	0	0	0.1	0	42.5	no	24	28	33.8	11.1
7	542	262.87	1490.5	0	0	0.5	0	42.5	no	24	3	22.7	2.35
8	542	262.87	1490.5	0	0	0.5	0	42.5	no	24	7	27.6	4.77
9	542	262.87	1490.5	0	0	0.5	0	42.5	no	24	28	35.3	8.6
10	542	262.87	1490.5	0	0	0	0.1	42.5	no	24	3	22.5	3.57
11	542	262.87	1490.5	0	0	0	0.1	42.5	no	24	7	25.2	7.69
12	542	262.87	1490.5	0	0	0	0.1	42.5	no	24	28	33.7	12.2

13	380	193.8	999.4	775.2	0	0	0	42.5	no	24	28	45.8	6.7
14	380	193.8	999.4	775.2	0	0.1	0	42.5	no	24	28	48.5	10
15	380	193.8	999.4	775.2	0	0	0.1	42.5	no	24	28	46.7	9.9
16	512.10	256.05	1536.3	0	2.05	0	0	42.5	no	24	28	31.8	5.9
17	512.10	256.05	1536.3	0	2.05	0.1	0	42.5	no	24	28	33.5	10.5
18	512.10	256.05	1536.3	0	2.05	0.1	0	42.5	no	24	28	33.1	10.2
19	512.10	256.05	1536.3	0	2.05	0.1	0	42.5	yes	24	28	33.9	12.9
20	1338.2	669.11	0	0	0	0.5	0	52.5	no	24	28	69.41	9.56
21	1338.2	669.11	0	0	0	0.5	0	52.5	yes	24	28	72.13	9.97
22	1363.6	681.82	0	0	0	0	0	42.5	no	24	28	74.8	10.2
23	1363.6	681.82	0	0	1.64	0.03	0	42.5	no	24	28	83.1	11.1
24	1363.6	681.82	0	0	4.36	0.08	0	42.5	no	24	28	80	10.8
25	1363.6	681.82	0	0	8.18	0.15	0	42.5	no	24	28	86.9	13.6
26	1363.6	681.82	0	0	13.64	0.25	0	42.5	no	24	28	91.8	16.1
27	1363.6	681.82	0	0	19.09	0.35	0	42.5	no	24	28	90	16.3
28	1363.6	681.82	0	0	27.27	0.5	0	42.5	no	24	28	94.3	16.4
29	359.20	179.6	1077.6	0	0	0	0	52.5	no	24	7	43.5	9.5
30	359.20	179.6	1077.6	0	0.00	0	0	52.5	no	24	28	54	10.35
31	359.20	179.6	1077.6	0	0.00	0	0	52.5	no	24	120	58	11.75
32	353.72	176.86	1061.15	0	1.03	0	0.25	52.5	no	24	7	43	9.8
33	353.72	176.86	1061.15	0	1.03	0	0.25	52.5	no	24	28	54.5	10.2
34	353.72	176.86	1061.15	0	1.03	0	0.25	52.5	no	24	120	60.6	11.3
35	348.32	174.16	1044.96	0	2.02	0	0.5	52.5	no	24	7	43.5	9.75
36	348.32	174.16	1044.96	0	2.02	0	0.5	52.5	no	24	28	55	10.4
37	348.32	174.16	1044.96	0	2.02	0	0.5	52.5	no	24	120	61	11.85
38	343	171.50	1029.01	0	2.95	0	0.75	52.5	no	24	7	44	10.1
39	343	171.50	1029.01	0	2.95	0	0.75	52.5	no	24	28	55.1	11.1
40	343	171.50	1029.01	0	2.95	0	0.75	52.5	no	24	120	62.5	11.8
41	337.77	168.88	1013.30	0	3.85	0	1	52.5	no	24	7	46.5	10
42	337.77	168.88	1013.30	0	3.85	0	1	52.5	no	24	28	54.8	11.3
43	337.77	168.88	1013.30	0	3.85	0	1	52.5	no	24	120	61.8	11.7
44	332.61	166.31	997.83	0	4.86	0	1.25	52.5	no	24	7	47.5	10.05
45	332.61	166.31	997.83	0	4.86	0	1.25	52.5	no	24	28	55	11.25
46	332.61	166.31	997.83	0	4.86	0	1.25	52.5	no	24	120	62.5	11.65
47	327.53	163.77	982.60	0	5.86	0	1.5	52.5	no	24	7	46	9.9
48	327.53	163.77	982.60	0	5.86	0	1.5	52.5	no	24	28	56.5	11.35
49	327.53	163.77	982.60	0	5.86	0	1.5	52.5	no	24	120	65	11.5
50	322.53	161.27	967.60	0	6.29	0	1.75	52.5	no	24	7	45.5	9.6
51	322.53	161.27	967.60	0	6.29	0	1.75	52.5	no	24	28	57.5	11.05
52	322.53	161.27	967.60	0	6.29	0	1.75	52.5	no	24	120	65.8	11.55
53	317.61	158.81	952.84	0	6.73	0	2	52.5	no	24	7	50	9.5
54	317.61	158.81	952.84	0	6.73	0	2	52.5	no	24	28	57.6	11.45
55	317.61	158.81	952.84	0	6.73	0	2	52.5	no	24	120	67	11.6
56	542	262.87	1490.5	0	0	0	0	42.5	no	24	3	19.95	4.1
57	542	262.87	1490.5	0	0	0	0	42.5	no	24	7	25	5.1
58	542	262.87	1490.5	0	0	0	0	42.5	no	24	28	31.7	5.9
59	542	262.87	1490.5	0	0	0.08	0	42.5	no	24	3	22.3	6.4
60	542	262.87	1490.5	0	0	0.08	0	42.5	no	24	7	26.1	7.5
61	542	262.87	1490.5	0	0	0.08	0	42.5	no	24	28	33.7	10.3
62	542	262.87	1490.5	0	0	0.1	0	42.5	no	24	3	22.9	6.9
63	542	262.87	1490.5	0	0	0.1	0	42.5	no	24	7	26.2	8.2
64	542	262.87	1490.5	0	0	0.1	0	42.5	no	24	28	33.8	11.1
65	542	262.87	1490.5	0	0	0.3	0	42.5	no	24	3	21.1	4.8
66	542	262.87	1490.5	0	0	0.3	0	42.5	no	24	7	28	6.7
67	542	262.87	1490.5	0	0	0.3	0	42.5	no	24	28	33.9	9.1
68	542	262.87	1490.5	0	0	0.5	0	42.5	no	24	3	22.8	4.7
69	542	262.87	1490.5	0	0	0.5	0	42.5	no	24	7	27.6	6.2
70	542	262.87	1490.5	0	0	0.5	0	42.5	no	24	28	35.3	8.6
71	664.80	232.68	1994.4	0	7.98	0	0	42.5	no	24	7	68.1	9.6
72	664.80	232.68	1994.4	0	7.98	0	0	42.5	no	24	28	72.1	10.3
73	664.80	232.68	1994.4	0	7.98	0	0	42.5	no	24	90	73.6	10.4
74	644.66	225.63	1933.98	0	7.735	0.1	0	42.5	no	24	7	76.8	11.8
75	644.66	225.63	1933.98	0	7.735	0.1	0	42.5	no	24	28	84.3	13.1
76	644.66	225.63	1933.98	0	7.735	0.1	0	42.5	no	24	90	86.8	13.3
77	654.65	229.13	1963.96	0	7.855	0.05	0	42.5	no	24	7	72.7	10.9
78	654.65	229.13	1963.96	0	7.855	0.05	0	42.5	no	24	28	75.8	12.7
79	654.65	229.13	1963.96	0	7.855	0.05	0	42.5	no	24	90	77.9	12

80	654.65	229.13	1963.96	0	7.855	0.05	0	42.5	no	24	7	80.6	12.1
81	654.65	229.13	1963.96	0	7.855	0.05	0	42.5	no	24	28	88.8	13.3
82	654.65	229.13	1963.96	0	7.855	0.05	0	42.5	no	24	90	90.4	13.6
83	525.56	236.5	709.5	0	0.788	0	0	42.5	no	24	7	45.3	7.1
84	525.56	236.5	709.5	0	0.788	0	0	42.5	no	24	28	56.4	8.9
85	525.56	236.5	709.5	0	0.788	0	0	42.5	no	24	90	57.9	9.6
86	509.64	229.34	688.01	0	0.764	0.1	0	42.5	no	24	7	53.2	9.3
87	509.64	229.34	688.01	0	0.764	0.1	0	42.5	no	24	28	64.7	10.6
88	509.64	229.34	688.012	0	0.764	0.1	0	42.5	no	24	90	65.8	11.1
89	517.54	232.89	698.68	0	0.776	0.05	0	42.5	no	24	7	46.7	7.9
90	517.54	232.89	698.68	0	0.776	0.05	0	42.5	no	24	28	56.5	9.9
91	517.54	232.89	698.68	0	0.776	0.05	0	42.5	no	24	90	57.5	10.2
92	517.54	232.89	698.68	0	0.776	0.05	0	42.5	no	24	7	55.4	9.3
93	517.54	232.89	698.68	0	0.776	0.05	0	42.5	no	24	28	65.2	10.5
94	517.54	232.89	698.68	0	0.776	0.05	0	42.5	no	24	90	65.7	10.6
95	512.10	256.05	1536.3	0	0	0	0	42.5	no	24	7	38.1	6.8
96	512.10	256.05	1536.3	0	0	0	0	42.5	no	24	28	51.3	8.3
97	512.10	256.05	1536.3	0	0	0	0	42.5	no	24	90	52.4	9.2
98	496.59	248.29	1489.76	0	0	0.1	0	42.5	no	24	7	46.3	9
99	496.59	248.29	1489.76	0	0	0.1	0	42.5	no	24	28	58.8	9.9
100	496.59	248.29	1489.76	0	0	0.1	0	42.5	no	24	90	61.5	10.2
101	504.28	252.14	1512.85	0	0	0.05	0	42.5	no	24	7	43	7.4
102	504.28	252.14	1512.85	0	0	0.05	0	42.5	no	24	28	52.9	8.8
103	504.28	252.14	1512.85	0	0	0.05	0	42.5	no	24	90	56.5	9.2
104	504.28	252.14	1512.85	0	0	0.05	0	42.5	no	24	7	45.6	8.2
105	504.28	252.14	1512.85	0	0	0.05	0	42.5	no	24	28	58.8	9.8
106	504.28	252.14	1512.85	0	0	0.05	0	42.5	no	24	90	59.5	10.1
107	499.30	274.61	1497.9	0	0	0	0	42.5	no	24	7	36.9	6.5
108	499.30	274.61	1497.9	0	0	0	0	42.5	no	24	28	48.8	7.6
109	499.30	274.61	1497.9	0	0	0	0	42.5	no	24	90	50.6	8.4
110	484.17	266.3	1452.52	0	0	0.1	0	42.5	no	24	7	38.9	8.3
111	484.17	266.3	1452.52	0	0	0.1	0	42.5	no	24	28	51	9.2
112	484.17	266.3	1452.52	0	0	0.1	0	42.5	no	24	90	52	9.3
113	491.68	270.42	1475.04	0	0	0.05	0	42.5	no	24	7	34.7	7.2
114	491.68	270.42	1475.04	0	0	0.05	0	42.5	no	24	28	44.3	7.8
115	491.68	270.42	1475.04	0	0	0.05	0	42.5	no	24	90	44.7	8.5
116	491.68	270.42	1475.04	0	0	0.05	0	42.5	no	24	7	42.1	7.8
117	491.68	270.42	1475.04	0	0	0.05	0	42.5	no	24	28	54.5	8.8
118	491.68	270.42	1475.04	0	0	0.05	0	42.5	no	24	90	58.1	9.3
119	1500	495	0	0	0	0	0	42.5	no	24	28	84.8	4
120	1500	495	0	0	0	0.025	0	42.5	no	24	28	90.1	4.3
121	1500	495	0	0	0	0.05	0	42.5	no	24	28	95.6	4.6
122	1500	495	0	0	0	0.1	0	42.5	no	24	28	97.2	5.2
123	1200	600	0	0	0	0	0	42.5	no	24	28	35.6	7.15
124	1200	600	0	0	0	0.1	0	42.5	no	24	28	20.4	5.21
125	1200	600	0	0	0	0.1	0	42.5	no	24	28	30.1	6.35
126	1200	600	0	0	0	0.1	0	42.5	no	24	28	32.4	6
127	1200	600	0	0	0	0.08	0	42.5	no	24	28	35	7.37
128	1200	600	0	0	0	0.1	0	42.5	yes	48	28	32	7.09
129	1200	600	0	0	0	0.1	0	42.5	yes	48	28	35.4	7.09
130	1500	600	0	0	0	0	0	42.5	no	24	28	45.5	7.04
131	1500	600	0	0	0	0.05	0	42.5	no	24	28	45.92	6.75
132	1500	600	0	0	0	0.05	0	42.5	no	24	28	50.17	7.83
133	1500	600	0	0	0	0.1	0	42.5	no	24	28	50.09	7.25
134	1500	600	0	0	0	0.1	0	42.5	no	24	28	55.05	8.25
135	496	272.8	1488	0	0	0	0	42.5	no	24	28	48	3.28
136	496	272.8	1488	0	0	0.05	0	42.5	no	24	28	55	3.31
137	496	272.8	1488	0	0	0.1	0	42.5	no	24	28	52	3.5
138	496	272.8	1488	0	0	0.15	0	42.5	no	24	28	53	4.2
139	400	160	660	1168	2.4	0	0	52.5	no	24	7	39	2.68
140	400	160	660	1168	2.4	0	0	52.5	no	24	28	49	4.85
141	400	160	660	1168	2.4	0.05	0	52.5	yes	24	7	40	3.61
142	400	160	660	1168	2.4	0.05	0	52.5	yes	24	28	45	6.25
143	400	160	660	1168	2.4	0.07	0	52.5	yes	24	7	42	3.98
144	400	160	660	1168	2.4	0.07	0	52.5	yes	24	28	54	7.37
145	400	160	660	1168	2.4	0.08	0	52.5	yes	24	7	55	4.57
146	400	160	660	1168	2.4	0.08	0	52.5	yes	24	28	67	9.2

147	400	160	660	1168	2.4	0.1	0	52.5	yes	24	7	48	4.2
148	400	160	660	1168	2.4	0.1	0	52.5	yes	24	28	54	8.42
149	422	147	621	1284	5.06	0	0	52.5	no	24	7	38.6	3.04
150	422	147	621	1284	5.06	0	0	52.5	no	24	28	61.2	5.2
151	422	147	621	1284	5.06	0.05	0	52.5	yes	24	7	55	4.24
152	422	147	621	1284	5.06	0.05	0	52.5	yes	24	28	78	6.57
153	422	147	621	1284	5.06	0.07	0	52.5	yes	24	7	50.8	4.52
154	422	147	621	1284	5.06	0.07	0	52.5	yes	24	28	72.6	7.82
155	422	147	621	1284	5.06	0.08	0	52.5	yes	24	7	51.4	5.12
156	422	147	621	1284	5.06	0.08	0	52.5	yes	24	28	73.2	9.64
157	422	147	621	1284	5.06	0.1	0	52.5	yes	24	7	59.3	4.61
158	422	147	621	1284	5.06	0.1	0	52.5	yes	24	28	83.6	8.32
159	504	142	683	1108	4.7	0	0	52.5	no	24	7	42	3.12
160	504	142	683	1108	4.7	0	0	52.5	no	24	28	72	5.35
161	504	142	683	1108	4.7	0.05	0	52.5	yes	24	7	58	4.35
162	504	142	683	1108	4.7	0.05	0	52.5	yes	24	28	89	6.68
163	504	142	683	1108	4.7	0.07	0	52.5	yes	24	7	55	4.68
164	504	142	683	1108	4.7	0.07	0	52.5	yes	24	28	85	7.91
165	504	142	683	1108	4.7	0.08	0	52.5	yes	24	7	54	6.54
166	504	142	683	1108	4.7	0.08	0	52.5	yes	24	28	83	9.74
167	504	142	683	1108	4.7	0.1	0	52.5	yes	24	7	60	4.62
168	504	142	683	1108	4.7	0.1	0	52.5	yes	24	28	92	8.21
169	1578.9	789.48	0	0	0	0	0	42.5	yes	24	3	54.9	9.47
170	1578.9	789.48	0	0	0	0.1	0	42.5	yes	24	21	61	9.65
171	1578.9	789.48	0	0	0	0	0	42.5	yes	24	28	66.5	10.1
172	1578.9	789.48	0	0	0	0.1	0	42.5	yes	24	3	60.5	10.35
173	1578.9	789.48	0	0	0	0	0	42.5	yes	24	21	62.3	10.45
174	1578.9	789.48	0	0	0	0.1	0	42.5	yes	24	28	66.2	11.4
175	1578.9	789.48	0	0	0	0.3	0	42.5	yes	24	3	58.7	10.5
176	1578.9	789.48	0	0	0	0	0	42.5	yes	24	21	66	11.1
177	1578.9	789.48	0	0	0	0.3	0	42.5	yes	24	28	67.1	11.7
178	1578.9	789.48	0	0	0	0.5	0	42.5	yes	24	3	52	8.4
179	1578.9	789.48	0	0	0	0	0	42.5	yes	24	21	60.5	9.55
180	1578.9	789.48	0	0	0	0.5	0	42.5	yes	24	28	62.5	10.3
181	450	180	1720	0	4.95	0	0	42.5	no	24	28	65	7.5
182	450	180	1720	0	4.95	0.5	0	42.5	no	24	28	71.875	10.1
183	450	180	1720	0	4.95	0.5	0	42.5	no	24	28	76.25	8.2
184	1103.2	496.44	1654.8	0	1.434	0	0	42.5	no	24	28	52.27	6.69
185	1103.2	496.44	1654.8	0	1.434	0.5	0	42.5	yes	24	28	62.13	8.37

Table B1.5 Dataset 3 – RESIST after revision

	Cement [kg/m³]	Water [kg/m³]	Fine aggregate [kg/m³]	Coarse aggregate [kg/m³]	Super plasticizer [kg/m³]	Nanofiller wt%		Cement class	Functionalization	Cross-section [cm]	Area of cross-section [cm²]	Probe distance [cm]	Demolding age [h]	Age [h]	Volume resistivity [Ω·cm]
						CNT	CNF								
#	min/max	min/max	min/max	min/max	min/max	min/max		0/1	0/1	0/1	min/max	min/max	min/max	0/1	min/max
1	1277	574	0	0	0	0	0	42.5	yes	5x5x5	25	4	48	28	76862.18
2	1270.85	571.88	0	0	0	0.25	0	42.5	yes	5x5x5	25	4	48	28	67699.31
3	1264.77	569.15	0	0	0	0.5	0	42.5	yes	5x5x5	25	4	48	28	56248.82
4	1258.74	566.43	0	0	0	0.75	0	42.5	yes	5x5x5	25	4	48	28	56248.82
5	1252.77	563.75	0	0	0	1	0	42.5	yes	5x5x5	25	4	48	28	6058.77
6	1241	558.45	0	0	0	1.5	0	42.5	yes	5x5x5	25	4	48	28	6769.93
7	654	294.3	1308	0	0	0	0	42.5	yes	5x5x5	25	4	48	28	100000
8	652.31	293.54	1304.62	0	0	0.25	0	42.5	yes	5x5x5	25	4	48	28	98522.17
9	650.63	292.78	1301.26	0	0	0.5	0	42.5	yes	5x5x5	25	4	48	28	67699.31
10	649	292	1297.92	0	0	0.75	0	42.5	yes	5x5x5	25	4	48	28	51170.79
11	647	291.29	1294.6	0	0	1	0	42.5	yes	5x5x5	25	4	48	28	71990.61
12	644	289.81	1288.04	0	0	1.5	0	42.5	yes	5x5x5	25	4	48	28	62419.63
13	524	235.8	951	638	2.62	0	0	42.5	yes	5x5x5	25	4	48	28	689655.17
14	521	234.44	942.97	635.60	7.81	0.75	0	42.5	yes	5x5x5	25	4	48	28	67699.31
15	520	234	941.16	634.38	7.80	1	0	42.5	yes	5x5x5	25	4	48	28	7686.22
16	518	233.1	937.58	632	7.77	1.5	0	42.5	yes	5x5x5	25	4	48	28	6058.77
17	518	233.10	937.58	632	7.77	0	1.5	42.5	yes	5x5x5	25	4	48	28	97077.67
18	516	232.21	934.01	629.56	7.74	0	2	42.5	yes	5x5x5	25	4	48	28	85795.67
19	1277	574	0	0	0	0	0	42.5	no	5x5x5	25	4	48	28	5405.41
20	511	229.96	0	0	0	0.5	0	42.5	no	5x5x5	25	4	48	28	526.32
21	508.60	228.87	0	0	0	0.75	0	42.5	no	5x5x5	25	4	48	28	512.82
22	506.21	227.79	0	0	0	1	0	42.5	no	5x5x5	25	4	48	28	769.23
23	501.49	225.67	0	0	0	1.5	0	42.5	no	5x5x5	25	4	48	28	666.67

24	654	294	1308	0	0	0	0	42.5	no	5x5x5	25	4	48	28	5025.13
25	498.94	224.52	997.88	0	0	0.5	0	42.5	no	5x5x5	25	4	48	28	512.82
26	497.65	223.94	995.31	0	0	0.75	0	42.5	no	5x5x5	25	4	48	28	518.13
27	524	234	951	638	2.62	0	0	42.5	no	5x5x5	25	4	48	28	54054.05
28	495.69	223.06	897.19	604.74	7.44	0.5	0	42.5	no	5x5x5	25	4	48	28	5128.21
29	494.75	222.64	895.50	603.60	7.42	0.75	0	42.5	no	5x5x5	25	4	48	28	5555.56
30	493.82	222.22	893.81	602.46	7.41	1	0	42.5	no	5x5x5	25	4	48	28	526.32
31	491.95	221.38	890.43	600.18	7.38	1.5	0	42.5	no	5x5x5	25	4	48	28	571.43
32	1579	789.48	0	0	0	0		42.5	yes	2x2x8	4	6	24	28	7700000
33	1579	789.48	0	0	0	0.048	0	42.5	yes	2x2x8	4	6	24	28	360000
34	1579	789.48	0	0	0	0.1	0	42.5	yes	2x2x8	4	6	24	28	260000
35	1579	789.48	0	0	0	0	0.048	42.5	yes	2x2x8	4	6	24	28	370000
36	1579	789.48	0	0	0	0	0.1	42.5	yes	2x2x8	4	6	24	28	570000
37	542	262.87	1490.5	0	0	0	0	42.5	no	2x2x8	4	6	24	28	75600
38	542	262.87	1490.5	0	0	0.1	0	42.5	no	2x2x8	4	6	24	28	55200
39	542	262.87	1490.5	0	0	0.5	0	42.5	no	2x2x8	4	6	24	28	63600
40	542	262.87	1490.5	0	0	0	0.1	42.5	no	2x2x8	4	6	24	28	64800
41	1071.43	642.86	0	0	0	0.1	0	42.5	yes	5x5x5	25	1	24	28	9810
42	448	191	877	838	0.62	0	1	42.5	yes	20x10	314	9	24	28	84100
43	448	191	877	838	0.71	0	1.5	42.5	yes	20x10	314	9	24	28	59300
44	478	191	1008	902	0.49	0	1	42.5	no	20x10	314	9	24	28	20100
45	478	191	1008	902	0.85	0	1.5	42.5	no	20x10	314	9	24	28	10000
46	478	191	1008	902	1.02	0	2	42.5	no	20x10	314	9	24	28	6000
47	478	191	1008	902	1.56	0	2.5	42.5	no	20x10	314	9	24	28	5400
48	478	191	1008	902	0.31	0	0.7	42.5	no	20x10	314	9	24	28	17500
49	478	191	1008	902	0.85	0	1.5	42.5	no	20x10	314	9	24	28	9600
50	478	191	1008	902	1.56	0	2.5	42.5	no	20x10	314	9	24	28	5400
51	1277	574	0	0	0	0	0	42.5	yes	5x5x5	25	1	24	28	604.7
52	1264.77	569.15	0	0	0	0.5	0	42.5	yes	5x5x5	25	1	24	28	249.8
53	1252.77	563.75	0	0	0	1	0	42.5	yes	5x5x5	25	1	24	28	141.3
54	1241.01	558.45	0	0	0	1.5	0	42.5	yes	5x5x5	25	1	24	28	119.5
55	1071.43	642.86	0	0	0	0	0	42.5	yes	5x5x5	25	1	24	28	574.9
56	1061.87	637.12	0	0	0	0.5	0	42.5	yes	5x5x5	25	1	24	28	225.6
57	1031.95	619.17	0	0	0	1	0	42.5	yes	5x5x5	25	1	24	28	127.2
58	1002.86	601.72	0	0	0	1.5	0	42.5	yes	5x5x5	25	1	24	28	108.2
59	974.60	584.76	0	0	0	2	0	42.5	yes	5x5x5	25	1	24	28	77.25
60	897.91	538.75	628.54	0	0	0	0	42.5	yes	5x5x5	25	1	24	28	1941.9
61	877.47	526.48	614.23	0	0	0.5	0	42.5	yes	5x5x5	25	1	24	28	1057
62	867.43	520.46	607.20	0	0	1	0	42.5	yes	5x5x5	25	1	24	28	552.3
63	857.50	514.50	600.25	0	0	1.5	0	42.5	yes	5x5x5	25	1	24	28	314.8
64	847.68	508.61	593.38	0	0	2	0	42.5	yes	5x5x5	25	1	24	28	206.6
65	1040.37	468.17	728.26	0	0	0	0	42.5	yes	5x5x5	25	1	24	28	1502.3
66	1016.69	457.51	711.68	0	0	0.5	0	42.5	yes	5x5x5	25	1	24	28	827.2
67	1005.05	452.27	703.53	0	0	1	0	42.5	yes	5x5x5	25	1	24	28	421.2
68	993.54	447.09	695.48	0	0	1.5	0	42.5	yes	5x5x5	25	1	24	28	273.4
69	899.93	539.96	630	0	0	0	0	42.5	yes	5x5x5	25	1	24	28	1463.9
70	879.44	527.67	615.61	0	0	0.5	0	42.5	yes	5x5x5	25	1	24	28	800
71	869.38	521.63	608.56	0	0	1	0	42.5	yes	5x5x5	25	1	24	28	415.5
72	859.42	515.65	601.60	0	0	1.5	0	42.5	yes	5x5x5	25	1	24	28	265.1
73	849.59	509.75	594.71	0	0	2	0	42.5	yes	5x5x5	25	1	24	28	132.7
74	1875	375	0	0	14.06	0	0	42.5	no	4x4x4	16	2	24	28	7200
75	1875	375	0	0	14.06	0.5	0	42.5	no	4x4x4	16	2	24	28	3200
76	1875	375	0	0	14.06	1	0	42.5	no	4x4x4	16	2	24	28	1000
77	1875	375	0	0	14.06	0	0	42.5	no	4x4x4	16	2	24	28	7200
78	1875	375	0	0	14.06	0	0.1	42.5	no	4x4x4	16	2	24	28	4000
79	1875	375	0	0	14.06	0	0.5	42.5	no	4x4x4	16	2	24	28	600
80	1875	375	0	0	14.06	0	0.5	42.5	no	4x4x4	16	2	24	28	350
81	1277	574	0	0	0	0	0	42.5	no	5x5x5	25	4	48	28	80645.16
82	1270.65	571.79	0	0	0	0.25	0	42.5	no	5x5x5	25	4	48	28	5128.21
83	1161.12	522.50	0	0	0	0.5	0	42.5	no	5x5x5	25	4	48	28	5882.35
84	1252.70	563.71	0	0	0	1	0	42.5	no	5x5x5	25	4	48	28	625.00
85	1241	558.45	0	0	0	1.5	0	42.5	no	5x5x5	25	4	48	28	526.32
86	524	235.8	943.2	639.28	2.62	0	0	42.5	no	5x5x5	25	4	48	28	1000000
87	523	235.33	941.32	638	1.07	0.25	0	42.5	no	5x5x5	25	4	48	28	54054.05
88	521	234.42	937.70	635.55	1.07	0.75	0	42.5	no	5x5x5	25	4	48	28	5263.16
89	520	233.98	935.93	634.35	1.07	1	0	42.5	no	5x5x5	25	4	48	28	526.32
90	518	233.10	932.38	632	1.06	1.5	0	42.5	no	5x5x5	25	4	48	28	666.67
91	1579	789.48	0	0	0	0	0	42.5	yes	4x4x16	16	4	24	7	11800
92	1579	789.48	0	0	0	0	0	42.5	yes	4x4x16	16	4	24	14	13100
93	1579	789.48	0	0	0	0	0	42.5	yes	4x4x16	16	4	24	21	13300
94	1579	789.48	0	0	0	0	0	42.5	yes	4x4x16	16	4	24	28	15500
95	1579	789.48	0	0	0	0.1	0	42.5	yes	4x4x16	16	4	24	7	9000
96	1579	789.48	0	0	0	0.1	0	42.5	yes	4x4x16	16	4	24	14	11550
97	1579	789.48	0	0	0	0.1	0	42.5	yes	4x4x16	16	4	24	21	11900
98	1579	789.48	0	0	0	0.1	0	42.5	yes	4x4x16	16	4	24	28	12200

99	1579	789.48	0	0	0	0.3	0	42.5	yes	4x4x16	16	4	24	7	7800
100	1579	789.48	0	0	0	0.3	0	42.5	yes	4x4x16	16	4	24	14	11500
101	1579	789.48	0	0	0	0.3	0	42.5	yes	4x4x16	16	4	24	21	11300
102	1579	789.48	0	0	0	0.3	0	42.5	yes	4x4x16	16	4	24	28	12100
103	1579	789.48	0	0	0	0.5	0	42.5	yes	4x4x16	16	4	24	7	6000
104	1579	789.48	0	0	0	0.5	0	42.5	yes	4x4x16	16	4	24	14	7500
105	1579	789.48	0	0	0	0.5	0	42.5	yes	4x4x16	16	4	24	21	7300
106	1579	789.48	0	0	0	0.5	0	42.5	yes	4x4x16	16	4	24	28	9150
107	1363.60	545.44	0	0	3.41	0.1	0	42.5	no	5x5x5	25	1.5	24	28	11500
108	1363.60	545.44	0	0	3.41	0.5	0	42.5	no	5x5x5	25	1.5	24	28	11100
109	1363.64	681.82	0	0	0	0.1	0	52.5	no	5x5x5	25	1	24	28	39215.69
110	1363.64	681.82	0	0	0	0.5	0	52.5	no	5x5x5	25	1	24	28	21505.38
111	1277	574	0	0	0	0	0	42.5	no	5x5x5	25	4	24	28	39000
112	1270.65	571.79	0	0	0	0.25	0	42.5	no	5x5x5	25	4	24	28	20000
113	1161.12	522.50	0	0	0	0.5	0	42.5	no	5x5x5	25	4	24	28	16000
114	1258.62	566.38	0	0	0	0.75	0	42.5	no	5x5x5	25	4	24	28	15500
115	1252.70	563.71	0	0	0	1	0	42.5	no	5x5x5	25	4	24	28	1600
116	1241	558.45	0	0	0	1.5	0	42.5	no	5x5x5	25	4	24	28	2700
117	654	294	1308	0	0	0	0	42.5	no	5x5x5	25	4	24	28	50000
118	652.34	293.55	1304.67	0	6.52	0.25	0	42.5	no	5x5x5	25	4	24	28	30000
119	650.68	292.81	1301.36	0	6.51	0.5	0	42.5	no	5x5x5	25	4	24	28	20000
120	649	292.05	1298	0	6.49	0.75	0	42.5	no	5x5x5	25	4	24	28	7000
121	647.33	291.30	1294.66	0	6.47	1	0	42.5	no	5x5x5	25	4	24	28	18000
122	644	289.81	1288	0	6.44	1.5	0	42.5	no	5x5x5	25	4	24	28	10000
123	524	234	951	638	2.62	0	0	42.5	no	5x5x5	25	4	24	28	60000
124	523	235.33	941.32	627.54	7.87	0.25	0	42.5	no	5x5x5	25	4	24	28	50000
125	522	234.87	939.47	626.31	7.86	0.5	0	42.5	no	5x5x5	25	4	24	28	38000
126	521	234.42	937.70	625.13	7.84	0.75	0	42.5	no	5x5x5	25	4	24	28	19000
127	520	233.98	935.93	624	7.83	1	0	42.5	no	5x5x5	25	4	24	28	4000
128	518	233.10	932.38	621.59	7.80	1.5	0	42.5	no	5x5x5	25	4	24	28	2000
129	1277	574	0	0	0	0	0	42.5	no	5x5x5	25	4	24	28	50000
130	1270.65	571.79	0	0	0	0	0.25	42.5	no	5x5x5	25	4	24	28	47000
131	1161.12	522.50	0	0	0	0	0.5	42.5	no	5x5x5	25	4	24	28	38000
132	1258.62	566.38	0	0	0	0	0.75	42.5	no	5x5x5	25	4	24	28	37000
133	1252.70	563.71	0	0	0	0	1	42.5	no	5x5x5	25	4	24	28	35000
134	1241	558.45	0	0	0	0	1.5	42.5	no	5x5x5	25	4	24	28	30000
135	1229.30	558.45	0	0	0	0	2	42.5	no	5x5x5	25	4	24	28	31000
136	654	294	1308	0	0	0	0	42.5	no	5x5x5	25	4	24	28	97000
137	652.34	293.55	1304.67	0	6.52	0	0.25	42.5	no	5x5x5	25	4	24	28	87000
138	650.68	292.81	1301.36	0	6.51	0	0.5	42.5	no	5x5x5	25	4	24	28	82000
139	649	292.05	1298	0	6.49	0	0.75	42.5	no	5x5x5	25	4	24	28	92000
140	647.33	291.30	1294.66	0	6.47	0	1	42.5	no	5x5x5	25	4	24	28	96000
141	644	289.81	1288	0	6.44	0	1.5	42.5	no	5x5x5	25	4	24	28	62000
142	640.80	289.81	1288	0	6.44	0	2	42.5	no	5x5x5	25	4	24	28	60000
143	524	234	951	638	2.62	0	0	42.5	no	5x5x5	25	4	24	28	240000
144	523	235.33	941.32	627.54	7.87	0	0.25	42.5	no	5x5x5	25	4	24	28	145000
145	521	234.42	937.70	625.13	7.84	0	0.75	42.5	no	5x5x5	25	4	24	28	100000
146	518	233.10	932.38	621.59	7.80	0	1.5	42.5	no	5x5x5	25	4	24	28	99000
147	516	233.10	932.38	621.59	7.80	0	2	42.5	no	5x5x5	25	4	24	28	65000
148	1277	574	0	0	0	0	0	42.5	no	5x5x5	25	4	24	28	50000
149	1270.65	571.79	0	0	0	0.25	0	42.5	no	5x5x5	25	4	24	28	35000
150	1161.12	522.50	0	0	0	0.5	0	42.5	no	5x5x5	25	4	24	28	18000
151	1252.70	563.71	0	0	0	1	0	42.5	no	5x5x5	25	4	24	28	1800
152	654	294	1308	0	0	0	0	42.5	no	5x5x5	25	4	24	28	90000
153	652.34	293.55	1304.67	0	6.52	0.25	0	42.5	no	5x5x5	25	4	24	28	80000
154	650.68	292.81	1301.36	0	6.51	0.5	0	42.5	no	5x5x5	25	4	24	28	40000
155	649	292	1298	0	6.49	0.75	0	42.5	no	5x5x5	25	4	24	28	11000
156	524	234	951	638	2.62	0	0	42.5	no	5x5x5	25	4	24	28	220000
157	523	235.33	941.32	627.54	7.87	0.25	0	42.5	no	5x5x5	25	4	24	28	160000
158	522	234.87	939.47	626.31	7.86	0.5	0	42.5	no	5x5x5	25	4	24	28	130000
159	521	234.42	937.70	625.13	7.84	0.75	0	42.5	no	5x5x5	25	4	24	28	45000
160	520	234	935.93	624	7.83	1	0	42.5	no	5x5x5	25	4	24	28	5500
161	518	233.10	932.38	621.59	7.80	1.5	0	42.5	no	5x5x5	25	4	24	28	2000
162	1277	575	0	0	6.3	1	0	42.5	no	5x5x5	25	4	24	28	614.3

Appendix B – Artificial Neural Networks

B2. Datasets - Group II

Table B2.1 Dataset 1 – C+F

#	Cement [kg/m³]	Water [kg/m³]	Fine aggregate [kg/m³]	Coarse aggregate [kg/m³]	Superplasticizer [kg/m³]	Nanofiller [wt%]		Cement class	Compressive strength [MPa]	Flexural strength [MPa]
						CNT	CNF			
	min/max	min/max	min/max	min/max	min/max	min/max	min/max	0/1	min/max	min/max
1	1363.64	681.82	0	0	0	0	0	52.5	51.13	13.32
2	1361.09	680.55	0	0	0	0.05	0	52.5	51.81	12.67
3	1358.55	679.28	0	0	0	0.1	0	52.5	52.17	12.06
4	1356.01	678.01	0	0	0	0.15	0	52.5	52.19	11.69
5	1353.47	676.74	0	0	0	0.2	0	52.5	52.29	11.37
6	1350.92	675.46	0	0	0	0.25	0	52.5	52.06	12.99
7	1348.38	674.19	0	0	0	0.3	0	52.5	52.29	13.10
8	1345.84	672.92	0	0	0	0.35	0	52.5	52.40	14.45
9	1343.30	671.65	0	0	0	0.4	0	52.5	52.37	15.35
10	1340.75	670.38	0	0	0	0.45	0	52.5	52.44	15.88
11	1338.21	669.11	0	0	0	0.5	0	52.5	52.51	16.61
12	1500	495	0	0	0	0	0	42.5	76.47	6.12
13	1500	495	0	0	0	0.01	0	42.5	76.86	6.03
14	1500	495	0	0	0	0.02	0	42.5	77.14	5.96
15	1500	495	0	0	0	0.03	0	42.5	77.36	5.88
16	1500	495	0	0	0	0.04	0	42.5	77.52	5.83
17	1500	495	0	0	0	0.05	0	42.5	77.64	5.77
18	1500	495	0	0	0	0.06	0	42.5	77.73	5.70
19	1500	495	0	0	0	0.07	0	42.5	77.73	5.66
20	1500	495	0	0	0	0.08	0	42.5	77.90	5.60
21	1500	495	0	0	0	0.09	0	42.5	77.93	5.56
22	1500	495	0	0	0	0.1	0	42.5	77.97	5.52
23	1200	600	0	0	0	0	0	42.5	32.10	10.95
24	1200	600	0	0	0	0.01	0	42.5	32.24	10.80
25	1200	600	0	0	0	0.02	0	42.5	32.35	10.69
26	1200	600	0	0	0	0.03	0	42.5	32.39	10.69
27	1200	600	0	0	0	0.04	0	42.5	32.53	10.44
28	1200	600	0	0	0	0.05	0	42.5	32.56	10.36
29	1200	600	0	0	0	0.06	0	42.5	32.63	10.27
30	1200	600	0	0	0	0.07	0	42.5	32.65	10.17
31	1200	600	0	0	0	0.08	0	42.5	32.71	10.11
32	1200	600	0	0	0	0.09	0	42.5	32.69	10.02
33	1200	600	0	0	0	0.1	0	42.5	32.62	9.98
34	1500	600	0	0	0	0	0	42.5	41.03	10.78
35	1500	600	0	0	0	0.01	0	42.5	41.21	10.63
36	1500	600	0	0	0	0.02	0	42.5	41.33	10.52
37	1500	600	0	0	0	0.03	0	42.5	41.47	10.39
38	1500	600	0	0	0	0.04	0	42.5	41.55	10.28
39	1500	600	0	0	0	0.05	0	42.5	41.64	10.18
40	1500	600	0	0	0	0.06	0	42.5	41.64	10.12
41	1500	600	0	0	0	0.07	0	42.5	41.76	9.98
42	1500	600	0	0	0	0.08	0	42.5	41.83	9.89
43	1500	600	0	0	0	0.09	0	42.5	41.79	9.86
44	1500	600	0	0	0	0.1	0	42.5	41.79	9.77
45	1578.95	789.475	0	0	0	0	0	42.5	59.97	15.46
46	1578.95	789.475	0	0	0	0.05	0	42.5	60.84	14.63
47	1578.95	789.475	0	0	0	0.1	0	42.5	61.12	14.02
48	1578.95	789.475	0	0	0	0.15	0	42.5	61.11	13.66
49	1578.95	789.475	0	0	0	0.2	0	42.5	61.26	13.29
50	1578.95	789.475	0	0	0	0.25	0	42.5	61.25	13.86
51	1578.95	789.475	0	0	0	0.3	0	42.5	61.03	15.76
52	1578.95	789.475	0	0	0	0.35	0	42.5	60.76	17.57
53	1578.95	789.475	0	0	0	0.4	0	42.5	60.81	18.52
54	1578.95	789.475	0	0	0	0.45	0	42.5	60.36	19.64
55	1578.95	789.475	0	0	0	0.5	0	42.5	60.04	20.22
56	542	262.87	1490.5	0	0	0	0	42.5	28.59	9.03
57	542	262.87	1490.5	0	0	0.05	0	42.5	28.79	8.83
58	542	262.87	1490.5	0	0	0.08	0	42.5	28.87	8.74
59	542	262.87	1490.5	0	0	0.1	0	42.5	28.94	8.66
60	542	262.87	1490.5	0	0	0.15	0	42.5	28.94	8.55
61	542	262.87	1490.5	0	0	0.2	0	42.5	29.05	8.41
62	542	262.87	1490.5	0	0	0.25	0	42.5	29.17	8.26
63	542	262.87	1490.5	0	0	0.3	0	42.5	29.15	8.19
64	542	262.87	1490.5	0	0	0.35	0	42.5	29.14	8.06

65	542	262.87	1490.5	0	0	0.4	0	42.5	29.17	7.96
66	542	262.87	1490.5	0	0	0.45	0	42.5	29.04	7.90
67	542	262.87	1490.5	0	0	0.5	0	42.5	29.03	7.81
68	512.1	256.05	1536.30	0	0	0	0	42.5	46.26	12.71
69	508.19	254.10	1524.58	0	0	0.025	0	42.5	46.41	12.57
70	504.28	252.14	1512.85	0	0	0.05	0	42.5	46.57	12.45
71	500.44	250.22	1501.31	0	0	0.075	0	42.5	46.65	12.34
72	496.59	248.29	1489.76	0	0	0.1	0	42.5	46.78	12.25
73	499.30	274.62	1497.90	0	0	0	0	42.5	44.01	11.63
74	495.49	272.52	1486.47	0	0	0.025	0	42.5	44.18	11.50
75	491.68	270.42	1475.04	0	0	0.05	0	42.5	44.28	11.40
76	487.93	268.36	1463.78	0	0	0.075	0	42.5	44.40	11.28
77	484.17	266.30	1452.52	0	0	0.1	0	42.5	44.49	11.20
78	512.1	256.05	1536.3	0	2.05	0	0	42.5	28.68	9.03
79	512.1	256.05	1536.3	0	2.05	0.025	0	42.5	28.79	8.93
80	512.1	256.05	1536.3	0	2.05	0.05	0	42.5	28.87	8.85
81	512.1	256.05	1536.3	0	2.05	0.075	0	42.5	28.95	8.76
82	512.1	256.05	1536.3	0	2.05	0.1	0	42.5	28.99	8.70
83	359.2	179.6	1077.6	0	0	0	0	52.5	48.70	15.84
84	358.1	179.05	1074.31	0	0.21	0	0.05	52.5	48.78	15.70
85	357.01	178.50	1071.02	0	0.41	0	0.1	52.5	48.85	15.56
86	355.91	177.96	1067.73	0	0.62	0	0.15	52.5	48.89	15.44
87	354.81	177.41	1064.44	0	0.82	0	0.2	52.5	48.98	15.30
88	353.72	176.86	1061.15	0	1.03	0	0.25	52.5	49.02	15.13
89	352.70	176.35	1058.11	0	1.22	0	0.3	52.5	48.95	15.03
90	351.61	175.80	1054.82	0	1.42	0	0.35	52.5	49.11	14.89
91	350.51	175.26	1051.53	0	1.62	0	0.4	52.5	49.03	14.69
92	349.41	174.71	1048.24	0	1.82	0	0.45	52.5	49.10	14.61
93	348.32	174.16	1044.96	0	2.02	0	0.5	52.5	49.04	14.56
94	347.39	173.69	1042.16	0	2.15	0	0.55	52.5	48.88	14.51
95	346.29	173.15	1038.87	0	2.35	0	0.6	52.5	49.11	14.31
96	345.19	172.60	1035.58	0	2.55	0	0.65	52.5	49.02	14.14
97	344.10	172.05	1032.30	0	2.75	0	0.7	52.5	49.09	13.93
98	343	171.50	1029.01	0	2.95	0	0.75	52.5	48.99	14.06
99	342.15	171.08	1026.46	0	3.05	0	0.8	52.5	48.86	13.72
100	341.06	170.53	1023.17	0	3.25	0	0.85	52.5	48.64	13.68
101	339.96	169.98	1019.88	0	3.45	0	0.9	52.5	48.62	14.06
102	338.86	169.43	1016.59	0	3.65	0	0.95	52.5	49.09	13.59
103	337.77	168.88	1013.30	0	3.85	0	1	52.5	48.47	13.70
104	337	168.50	1010.99	0	4.06	0	1.05	52.5	48.77	13.31
105	335.90	167.95	1007.70	0	4.26	0	1.1	52.5	48.60	14.39
106	334.80	167.40	1004.41	0	4.46	0	1.15	52.5	48.18	15.54
107	333.71	166.85	1001.12	0	4.66	0	1.2	52.5	48.84	14.21
108	332.61	166.31	997.83	0	4.86	0	1.25	52.5	48.27	15.82
109	331.92	165.96	995.76	0	5.07	0	1.3	52.5	48.70	15.38
110	330.82	165.41	992.47	0	5.27	0	1.35	52.5	49.13	14.94
111	329.73	164.86	989.18	0	5.47	0	1.4	52.5	49.07	16.41
112	328.63	164.32	985.89	0	5.66	0	1.45	52.5	48.93	16.35
113	327.53	163.77	982.60	0	5.86	0	1.5	52.5	48.48	17.60
114	326.92	163.46	980.76	0	5.49	0	1.55	52.5	47.89	18.46
115	325.82	162.91	977.47	0	5.69	0	1.6	52.5	47.67	19.85
116	324.73	162.36	974.18	0	5.89	0	1.65	52.5	48.09	18.66
117	323.63	161.82	970.89	0	6.09	0	1.7	52.5	47.83	20.43
118	322.53	161.27	967.60	0	6.29	0	1.75	52.5	47.53	21.03
119	322	161.00	965.99	0	5.94	0	1.8	52.5	47.99	19.35
120	320.90	160.45	962.70	0	6.14	0	1.85	52.5	49.70	17.09
121	319.81	159.90	959.42	0	6.34	0	1.9	52.5	49.80	17.15
122	318.71	159.35	956.13	0	6.53	0	1.95	52.5	49.92	17.35
123	317.61	158.81	952.84	0	6.73	0	2	52.5	49.86	17.56
124	664.80	232.68	1994.4	0	7.98	0	0	42.5	65.02	15.77
125	659.73	230.90	1979.18	0	7.92	0.025	0	42.5	65.26	15.59
126	654.65	229.13	1963.96	0	7.86	0.05	0	42.5	65.43	15.45
127	649.66	227.38	1948.97	0	7.80	0.075	0	42.5	65.59	15.33
128	644.66	225.63	1933.98	0	7.74	0.1	0	42.5	65.75	15.17
129	525.56	236.50	709.51	0	0.79	0	0	42.5	50.86	13.62
130	521.48	234.66	704.02	0	0.79	0.025	0	42.5	51.06	13.47
131	517.54	232.89	698.68	0	0.78	0.05	0	42.5	51.19	13.35
132	513.60	231.12	693.34	0	0.77	0.075	0	42.5	51.30	13.22
133	509.64	229.34	688.01	0	0.76	0.1	0	42.5	51.42	13.12
134	450	180	1720	0	4.95	0	0	42.5	58.62	11.48
135	450	180	1720	0	4.95	0.05	0	42.5	58.98	11.27
136	450	180	1720	0	4.95	0.1	0	42.5	59.12	11.14
137	450	180	1720	0	4.95	0.15	0	42.5	59.39	10.92
138	450	180	1720	0	4.95	0.2	0	42.5	59.56	10.78
139	450	180	1720	0	4.95	0.25	0	42.5	59.61	10.66

140	450	180	1720	0	4.95	0.3	0	42.5	59.71	10.61
141	450	180	1720	0	4.95	0.35	0	42.5	59.84	10.45
142	450	180	1720	0	4.95	0.4	0	42.5	59.81	10.35
143	450	180	1720	0	4.95	0.45	0	42.5	59.85	10.20
144	450	180	1720	0	4.95	0.5	0	42.5	59.80	10.16
145	1103.2	496.44	1654.8	0	1.43	0	0	42.5	47.14	10.24
146	1103.2	496.44	1654.8	0	1.43	0.05	0	42.5	47.58	9.94
147	1103.2	496.44	1654.8	0	1.43	0.1	0	42.5	47.80	9.72
148	1103.2	496.44	1654.8	0	1.43	0.15	0	42.5	47.98	9.47
149	1103.2	496.44	1654.8	0	1.43	0.2	0	42.5	48.09	9.26
150	1103.2	496.44	1654.8	0	1.43	0.25	0	42.5	48.12	9.11
151	1103.2	496.44	1654.8	0	1.43	0.3	0	42.5	48.14	9.01
152	1103.2	496.44	1654.8	0	1.43	0.35	0	42.5	48.12	8.96
153	1103.2	496.44	1654.8	0	1.43	0.4	0	42.5	47.78	8.84
154	1103.2	496.44	1654.8	0	1.43	0.45	0	42.5	48.04	8.93
155	1103.2	496.44	1654.8	0	1.43	0.5	0	42.5	47.88	9.82
156	380	193.8	999.4	775.2	0	0	0	42.5	41.30	10.26
157	380	193.8	999.4	775.2	0	0.025	0	42.5	41.42	10.18
158	380	193.8	999.4	775.2	0	0.5	0	42.5	41.50	10.10
159	380	193.8	999.4	775.2	0	0.075	0	42.5	41.59	10.03
160	380	193.8	999.4	775.2	0	0.1	0	42.5	41.65	9.97
161	380	193.8	999.4	775.2	0	0	0.025	42.5	41.32	10.22
162	380	193.8	999.4	775.2	0	0	0.5	42.5	41.36	10.19
163	380	193.8	999.4	775.2	0	0	0.075	42.5	41.37	10.16
164	380	193.8	999.4	775.2	0	0	0.1	42.5	41.41	10.13

Appendix B – Artificial Neural Networks

B3. Datasets – Evaluation

Table B3.1 COMP dataset for repeated training (80% of the initial set)

	Cement [kg/m³]	Water [kg/m³]	Fine aggregate [kg/m³]	Coarse aggregate [kg/m³]	Superplasticizer [kg/m³]	Nanofiller [wt%]		Cement class	Functionalization	Cross-section [cm]	Demolding age [h]	Age [h]	Compressive strength [MPa]
						CNT	CNF						
#	min/max	min/max	min/max	min/max	min/max	min/max	min/max	0/1	0/1	0/1	min/max	min/max	min/max
1	542	262.9	1490.5	0	0	0	0	42.5	no	4x4x8	24	3	19.8
2	542	262.9	1490.5	0	0	0	0	42.5	no	4x4x8	24	7	25.6
3	542	262.9	1490.5	0	0	0.1	0	42.5	no	4x4x8	24	3	22.6
4	542	262.9	1490.5	0	0	0.1	0	42.5	no	4x4x8	24	7	26.5
5	542	262.9	1490.5	0	0	0.1	0	42.5	no	4x4x8	24	28	33.8
6	542	262.9	1490.5	0	0	0.5	0	42.5	no	4x4x8	24	3	22.7
7	542	262.9	1490.5	0	0	0.5	0	42.5	no	4x4x8	24	7	27.6
8	542	262.9	1490.5	0	0	0	0.1	42.5	no	4x4x8	24	3	22.5
9	542	262.9	1490.5	0	0	0	0.1	42.5	no	4x4x8	24	7	25.2
10	542	262.9	1490.5	0	0	0	0.1	42.5	no	4x4x8	24	28	33.7
11	380	193.8	999.4	775.2	0	0	0	42.5	no	7x14	24	28	45.8
12	380	193.8	999.4	775.2	0	0.1	0	42.5	no	7x14	24	28	48.5
13	380	193.8	999.4	775.2	0	0	0.1	42.5	no	7x14	24	28	46.7
14	3800	121.6	547.2	839.8	0	0	0	42.5	no	7x14	24	28	64.5
15	512.1	256.1	1536.3	0	2.0484	0	0	42.5	no	4x4x16	24	28	31.8
16	512.1	256.1	1536.3	0	2.0484	0.1	0	42.5	no	4x4x16	24	28	33.5
17	512.1	256.1	1536.3	0	2.0484	0.1	0	42.5	yes	4x4x16	24	28	33.9
18	1071	642.9	0	0	0	0.1	0	42.5	yes	5x5x5	24	28	40
19	1364	681.8	0	0	0	0	0	52.5	no	4x4x16	24	28	56.7
20	1338	669.1	0	0	0	0.5	0	52.5	no	4x4x16	24	28	69.41
21	1364	681.82	0.00	0.00	0	0	0	42.5	no	5x5x5	24	28	74.8
22	1364	681.82	0.00	0.00	1.6364	0.03	0	42.5	no	5x5x5	24	28	83.1
23	1364	681.82	0.00	0.00	8.1818	0.15	0	42.5	no	5x5x5	24	28	86.9
24	1364	681.82	0.00	0.00	13.636	0.25	0	42.5	no	5x5x5	24	28	91.8
25	1364	681.82	0.00	0.00	27.273	0.5	0	42.5	no	5x5x5	24	28	94.3
26	359.2	179.6	1077.6	0	0	0	0	52.5	no	4x4x16	24	7	43.5
27	359.2	179.6	1077.6	0	0.00	0	0	52.5	no	4x4x16	24	28	54
28	359.2	179.6	1077.6	0	0.00	0	0	52.5	no	4x4x16	24	120	58
29	353.7	176.86	1061.2	0	1.03	0	0.25	52.5	no	4x4x16	24	7	43
30	353.7	176.86	1061.2	0	1.03	0	0.25	52.5	no	4x4x16	24	120	60.6
31	348.3	174.16	1045	0	2.02	0	0.5	52.5	no	4x4x16	24	7	43.5
32	348.3	174.16	1045	0	2.02	0	0.5	52.5	no	4x4x16	24	28	55
33	343	171.50	1029	0	2.95	0	0.75	52.5	no	4x4x16	24	7	44
34	343	171.50	1029	0	2.95	0	0.75	52.5	no	4x4x16	24	28	55.1
35	343	171.50	1029	0	2.95	0	0.75	52.5	no	4x4x16	24	120	62.5
36	337.8	168.88	1013.3	0	3.85	0	1	52.5	no	4x4x16	24	28	54.8
37	337.8	168.88	1013.3	0	3.85	0	1	52.5	no	4x4x16	24	120	61.8
38	332.6	166.31	997.83	0	4.86	0	1.25	52.5	no	4x4x16	24	7	47.5
39	332.6	166.31	997.83	0	4.86	0	1.25	52.5	no	4x4x16	24	120	62.5
40	327.5	163.77	982.6	0	5.86	0	1.5	52.5	no	4x4x16	24	7	46
41	327.5	163.77	982.6	0	5.86	0	1.5	52.5	no	4x4x16	24	28	56.5
42	327.5	163.77	982.6	0	5.86	0	1.5	52.5	no	4x4x16	24	120	65
43	322.5	161.27	967.6	0	6.29	0	1.75	52.5	no	4x4x16	24	7	45.5
44	322.5	161.27	967.6	0	6.29	0	1.75	52.5	no	4x4x16	24	120	65.8
45	317.6	158.81	952.84	0	6.73	0	2	52.5	no	4x4x16	24	7	50
46	317.6	158.81	952.84	0	6.73	0	2	52.5	no	4x4x16	24	120	67
47	1200	600	0	0	0	0	0	52.5	no	4x4x16	24	7	38.65
48	1200	600	0	0	0	0	0	52.5	no	4x4x16	24	28	46.7
49	1200	600	0	0	1.8	0	0.5	52.5	no	4x4x16	24	7	39.12
50	1200	600	0	0	3.6	0	1	52.5	no	4x4x16	24	7	38.78
51	1200	600	0	0	3.6	0	1	52.5	no	4x4x16	24	28	45.67
52	1200	600	0	0	6.6	0	2	52.5	no	4x4x16	24	28	44.56
53	542	262.9	1490.5	0	0	0	0	42.5	no	4x4x16	24	3	19.95
54	542	262.9	1490.5	0	0	0	0	42.5	no	4x4x16	24	7	25
55	542	262.9	1490.5	0	0	0	0	42.5	no	4x4x16	24	28	31.7
56	542	262.9	1490.5	0	0	0.08	0	42.5	no	4x4x16	24	7	26.1

57	542	262.9	1490.5	0	0	0.08	0	42.5	no	4x4x16	24	28	33.7
58	542	262.9	1490.5	0	0	0.1	0	42.5	no	4x4x16	24	3	22.9
59	542	262.9	1490.5	0	0	0.1	0	42.5	no	4x4x16	24	7	26.2
60	542	262.9	1490.5	0	0	0.3	0	42.5	no	4x4x16	24	3	21.1
61	542	262.9	1490.5	0	0	0.3	0	42.5	no	4x4x16	24	7	28
62	542	262.9	1490.5	0	0	0.3	0	42.5	no	4x4x16	24	28	33.9
63	542	262.9	1490.5	0	0	0.5	0	42.5	no	4x4x16	24	3	22.8
64	542	262.9	1490.5	0	0	0.5	0	42.5	no	4x4x16	24	28	35.3
65	664.8	232.7	1994.4	0	7.9776	0	0	42.5	no	4x4x16	24	7	68.1
66	664.8	232.7	1994.4	0	7.9776	0	0	42.5	no	4x4x16	24	28	72.1
67	664.8	232.7	1994.4	0	7.9776	0	0	42.5	no	4x4x16	24	90	73.6
68	644.7	225.6	1934	0	7.7359	0.1	0	42.5	no	4x4x16	24	7	76.8
69	644.7	225.6	1934	0	7.7359	0.1	0	42.5	no	4x4x16	24	90	86.8
70	654.7	229.1	1964	0	7.8558	0.05	0	42.5	no	4x4x16	24	7	72.7
71	654.7	229.1	1964	0	7.8558	0.05	0	42.5	no	4x4x16	24	28	75.8
72	654.7	229.1	1964	0	7.8558	0.05	0	42.5	no	4x4x16	24	90	77.9
73	654.7	229.1	1964	0	7.8558	0.05	0	42.5	no	4x4x16	24	7	80.6
74	654.7	229.1	1964	0	7.8558	0.05	0	42.5	no	4x4x16	24	28	88.8
75	525.6	236.5	709.5	0	0.7883	0	0	42.5	no	4x4x16	24	7	45.3
76	525.6	236.5	709.5	0	0.7883	0	0	42.5	no	4x4x16	24	28	56.4
77	525.6	236.5	709.5	0	0.7883	0	0	42.5	no	4x4x16	24	90	57.9
78	509.6	229.3	688	0	0.7645	0.1	0	42.5	no	4x4x16	24	7	53.2
79	509.6	229.3	688	0	0.7645	0.1	0	42.5	no	4x4x16	24	90	65.8
80	517.5	232.9	698.68	0	0.7763	0.05	0	42.5	no	4x4x16	24	7	46.7
81	517.5	232.9	698.68	0	0.7763	0.05	0	42.5	no	4x4x16	24	28	56.5
82	517.5	232.9	698.68	0	0.7763	0.05	0	42.5	no	4x4x16	24	90	57.5
83	517.5	232.9	698.68	0	0.7763	0.05	0	42.5	no	4x4x16	24	7	55.4
84	517.5	232.9	698.68	0	0.7763	0.05	0	42.5	no	4x4x16	24	90	65.7
85	512.1	256.1	1536.3	0	0	0	0	42.5	no	4x4x16	24	7	38.1
86	512.1	256.1	1536.3	0	0	0	0	42.5	no	4x4x16	24	28	51.3
87	512.1	256.1	1536.3	0	0	0	0	42.5	no	4x4x16	24	90	52.4
88	496.6	248.3	1489.8	0	0	0.1	0	42.5	no	4x4x16	24	28	58.8
89	496.6	248.3	1489.8	0	0	0.1	0	42.5	no	4x4x16	24	90	61.5
90	504.3	252.1	1512.9	0	0	0.05	0	42.5	no	4x4x16	24	7	43
91	504.3	252.1	1512.9	0	0	0.05	0	42.5	no	4x4x16	24	90	56.5
92	504.3	252.1	1512.9	0	0	0.05	0	42.5	no	4x4x16	24	7	45.6
93	504.3	252.1	1512.9	0	0	0.05	0	42.5	no	4x4x16	24	90	59.5
94	499.3	274.6	1497.9	0	0	0	0	42.5	no	4x4x16	24	7	36.9
95	499.3	274.6	1497.9	0	0	0	0	42.5	no	4x4x16	24	28	48.8
96	499.3	274.6	1497.9	0	0	0	0	42.5	no	4x4x16	24	90	50.6
97	484.2	266.3	1452.5	0	0	0.1	0	42.5	no	4x4x16	24	7	38.9
98	484.2	266.3	1452.5	0	0	0.1	0	42.5	no	4x4x16	24	90	52
99	491.7	270.4	1475	0	0	0.05	0	42.5	no	4x4x16	24	7	34.7
100	491.7	270.4	1475	0	0	0.05	0	42.5	no	4x4x16	24	28	44.3
101	491.7	270.4	1475	0	0	0.05	0	42.5	no	4x4x16	24	90	44.7
102	491.7	270.4	1475	0	0	0.05	0	42.5	no	4x4x16	24	7	42.1
103	491.7	270.4	1475	0	0	0.05	0	42.5	no	4x4x16	24	90	58.1
104	572	188	572	1015	0	0	0	42.5	no	30x15	24	28	51.23
105	571	188	572	1015	0.22	0	0.16	42.5	no	30x15	24	28	73.08
106	569	188	572	1015	0.71	0	0.78	42.5	no	30x15	24	28	53.5
107	566	188	572	1015	1.38	0	1.55	42.5	no	30x15	24	28	50.26
108	480	191	942	901	0.49	0	0.25	42.5	no	30x15	24	28	43.44
109	448	191	877	838	0.62	0	0.5	42.5	no	30x15	24	28	51.64
110	448	191	877	838	0.62	0	1	42.5	yes	30x15	24	28	41.16
111	448	191	877	838	0.71	0	1.5	42.5	yes	30x15	24	28	39.78
112	478	191	1008	902	0.85	0	1.5	42.5	no	30x15	24	28	52.33
113	478	191	1008	902	1.02	0	2	42.5	no	30x15	24	28	56.6
114	478	191	1008	902	1.56	0	2.5	42.5	no	30x15	24	28	51.57
115	478	191	1008	902	0.49	0	1	42.5	no	30x15	24	28	55.23
116	478	191	1008	902	1.02	0	2	42.5	no	30x15	24	28	43.78
117	478	191	1008	902	1.56	0	2.5	42.5	no	30x15	24	28	44.33
118	1500	495	0	0	0	0	0	42.5	no	4x4x16	24	7	40.4
119	1500	495	0	0	0	0.025	0	42.5	no	4x4x16	24	7	44.2
120	1500	495	0	0	0	0.1	0	42.5	no	4x4x16	24	7	49.2
121	1500	495	0	0	0	0	0	42.5	no	4x4x16	24	28	84.8
122	1500	495	0	0	0	0.025	0	42.5	no	4x4x16	24	28	90.1
123	1500	495	0	0	0	0.05	0	42.5	no	4x4x16	24	28	95.6

124	1277	574	0	0	0	0	0	42.5	yes	5x5x5	24	28	37.6
125	1275	573.5	0	0	0	0.1	0	42.5	yes	5x5x5	24	28	44.3
126	1265	569.1	0	0	0	0.5	0	42.5	yes	5x5x5	24	28	51.2
127	1253	563.7	0	0	0	1	0	42.5	yes	5x5x5	24	28	58.4
128	1071	642.9	0	0	0	0	0	42.5	yes	5x5x5	24	28	41.3
129	1069	641.6	0	0	0	0.1	0	42.5	yes	5x5x5	24	28	48.2
130	1032	619.2	0	0	0	1	0	42.5	yes	5x5x5	24	28	66.3
131	1003	601.7	0	0	0	1.5	0	42.5	yes	5x5x5	24	28	68.2
132	974.6	584.8	0	0	0	2	0	42.5	yes	5x5x5	24	28	61.5
133	897.9	538.7	628.54	0	0	0	0	42.5	yes	5x5x5	24	28	40.6
134	877.5	526.5	614.23	0	0	0.5	0	42.5	yes	5x5x5	24	28	60.7
135	867.4	520.5	607.2	0	0	1	0	42.5	yes	5x5x5	24	28	76.3
136	857.5	514.5	600.25	0	0	1.5	0	42.5	yes	5x5x5	24	28	87.7
137	847.7	508.6	593.38	0	0	2	0	42.5	yes	5x5x5	24	28	95.6
138	1040	468.2	728.26	0	0	0	0	42.5	yes	5x5x5	24	28	38.6
139	1017	457.5	711.68	0	0	0.5	0	42.5	yes	5x5x5	24	28	56.1
140	1005	452.3	703.53	0	0	1	0	42.5	yes	5x5x5	24	28	68.1
141	899.9	540	629.95	0	0	0	0	42.5	yes	5x5x5	24	28	42.27
142	889.6	533.8	622.74	0	0	0.1	0	42.5	yes	5x5x5	24	28	53.7
143	879.4	527.7	615.61	0	0	0.5	0	42.5	yes	5x5x5	24	28	60.7
144	859.4	515.7	601.6	0	0	1.5	0	42.5	yes	5x5x5	24	28	91
145	849.6	509.8	594.71	0	0	2	0	42.5	yes	5x5x5	24	28	102.57
146	1200	600	0	0	0	0	0	42.5	no	4x4x16	24	28	35.6
147	1200	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	20.4
148	1200	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	32.4
149	1200	600	0	0	0	0.08	0	42.5	no	4x4x16	24	28	35
150	1200	600	0	0	0	0.1	0	42.5	yes	4x4x16	48	28	35.4
151	1500	600	0	0	0	0	0	42.5	no	4x4x16	24	28	45.5
152	1500	600	0	0	0	0.05	0	42.5	no	4x4x16	24	28	45.92
153	1500	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	50.09
154	1500	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	55.05
155	320.2	252.93	1921	0	0	0	0	42.5	no	7x7x7	24	3	5.9
156	320.2	252.93	1921	0	0	0	0	42.5	no	7x7x7	24	7	8.9
157	320.2	252.93	1921	0	0	0	0	42.5	no	7x7x7	24	14	9.9
158	320.2	252.93	1921	0	0	0.2	0	42.5	no	7x7x7	24	3	7.4
159	320.2	252.93	1921	0	0	0.2	0	42.5	no	7x7x7	24	7	8.3
160	320.2	252.93	1921	0	0	0.2	0	42.5	no	7x7x7	24	28	11.9
161	320.2	252.93	1921	0	0	0.4	0	42.5	no	7x7x7	24	3	8.2
162	320.2	252.93	1921	0	0	0.4	0	42.5	no	7x7x7	24	7	8.2
163	320.2	252.93	1921	0	0	0.4	0	42.5	no	7x7x7	24	14	8.45
164	320.2	252.93	1921	0	0	0.6	0	42.5	no	7x7x7	24	3	4.4
165	320.2	252.93	1921	0	0	0.6	0	42.5	no	7x7x7	24	7	7.98
166	320.2	252.93	1921	0	0	0.6	0	42.5	no	7x7x7	24	14	9.9
167	320.2	252.93	1921	0	0	0.6	0	42.5	no	7x7x7	24	28	10.9
168	320.2	252.93	1921	0	0	0.8	0	42.5	no	7x7x7	24	3	7.15
169	320.2	252.93	1921	0	0	0.8	0	42.5	no	7x7x7	24	7	7.9
170	320.2	252.93	1921	0	0	0.8	0	42.5	no	7x7x7	24	14	8.2
171	496	272.8	1488	0	0	0	0	42.5	no	4x4x16	24	28	48
172	496	272.8	1488	0	0	0.05	0	42.5	no	4x4x16	24	28	55
173	496	272.8	1488	0	0	0.1	0	42.5	no	4x4x16	24	28	52
174	496	272.8	1488	0	0	0.15	0	42.5	no	4x4x16	24	28	53
175	620	250	0	0	0	0	0	42.5	no	5x5x5	24	3	21.72
176	620	250	0	0	0	0	0	42.5	no	5x5x5	24	3	23
177	620	250	0	0	0	0	0	42.5	no	5x5x5	24	3	20.36
178	620	250	0	0	0	0	0	42.5	no	5x5x5	24	7	30.76
179	620	250	0	0	0	0	0	42.5	no	5x5x5	24	7	28.8
180	620	250	0	0	0	0	0	42.5	no	5x5x5	24	14	38.16
181	620	250	0	0	0	0	0	42.5	no	5x5x5	24	14	35.44
182	620	250	0	0	0	0	0	42.5	no	5x5x5	24	14	39.36
183	620	250	0	0	0	0	0	42.5	no	5x5x5	24	28	61.2
184	620	250	0	0	0	0	0	42.5	no	5x5x5	24	28	71.56
185	620	250	0	0	0	0.2	0	42.5	no	5x5x5	24	7	43.8
186	620	250	0	0	0	0.2	0	42.5	no	5x5x5	24	28	73.1
187	620	250	0	0	0	0.4	0	42.5	no	5x5x5	24	7	43.9
188	620	250	0	0	0	0.2	0	42.5	yes	5x5x5	24	7	45.4
189	620	250	0	0	0	0.2	0	42.5	yes	5x5x5	24	28	68.2
190	620	250	0	0	0	0.4	0	42.5	yes	5x5x5	24	28	69

191	620	250	0	0	0	0.2	0	42.5	yes	5x5x5	24	7	43.3
192	620	250	0	0	0	0.2	0	42.5	yes	5x5x5	24	28	85.7
193	620	250	0	0	0	0.4	0	42.5	yes	5x5x5	24	7	45.7
194	474	237	793	793	0	0	0	42.5	no	7.5x15	24	28	34
195	474	237	793	793	0	0.01	0	42.5	no	7.5x15	24	28	41.2
196	400	160	660	1168	2.4	0	0	52.5	no	15x15x15	24	3	20
197	400	160	660	1168	2.4	0	0	52.5	no	15x15x15	24	7	39
198	400	160	660	1168	2.4	0	0	52.5	no	15x15x15	24	28	49
199	400	160	660	1168	2.4	0.05	0	52.5	yes	15x15x15	24	3	22
200	400	160	660	1168	2.4	0.05	0	52.5	yes	15x15x15	24	28	45
201	400	160	660	1168	2.4	0.07	0	52.5	yes	15x15x15	24	3	22
202	400	160	660	1168	2.4	0.07	0	52.5	yes	15x15x15	24	7	42
203	400	160	660	1168	2.4	0.08	0	52.5	yes	15x15x15	24	3	28
204	400	160	660	1168	2.4	0.08	0	52.5	yes	15x15x15	24	7	55
205	400	160	660	1168	2.4	0.1	0	52.5	yes	15x15x15	24	3	24
206	400	160	660	1168	2.4	0.1	0	52.5	yes	15x15x15	24	7	48
207	400	160	660	1168	2.4	0.1	0	52.5	yes	15x15x15	24	28	54
208	422	147	621	1284	5.06	0	0	52.5	no	15x15x15	24	7	38.6
209	422	147	621	1284	5.06	0	0	52.5	no	15x15x15	24	28	61.2
210	422	147	621	1284	5.06	0.05	0	52.5	yes	15x15x15	24	7	55
211	422	147	621	1284	5.06	0.05	0	52.5	yes	15x15x15	24	28	78
212	422	147	621	1284	5.06	0.07	0	52.5	yes	15x15x15	24	3	29.6
213	422	147	621	1284	5.06	0.07	0	52.5	yes	15x15x15	24	7	50.8
214	422	147	621	1284	5.06	0.07	0	52.5	yes	15x15x15	24	28	72.6
215	422	147	621	1284	5.06	0.08	0	52.5	yes	15x15x15	24	3	38.6
216	422	147	621	1284	5.06	0.08	0	52.5	yes	15x15x15	24	28	73.2
217	422	147	621	1284	5.06	0.1	0	52.5	yes	15x15x15	24	3	33.4
218	422	147	621	1284	5.06	0.1	0	52.5	yes	15x15x15	24	7	59.3
219	422	147	621	1284	5.06	0.1	0	52.5	yes	15x15x15	24	28	83.6
220	422	147	621	1284	5.06	0.15	0	52.5	yes	15x15x15	24	28	77.6
221	504	142	683	1108	4.7	0	0	52.5	no	15x15x15	24	3	38
222	504	142	683	1108	4.7	0	0	52.5	no	15x15x15	24	7	42
223	504	142	683	1108	4.7	0	0	52.5	no	15x15x15	24	28	72
224	504	142	683	1108	4.7	0.05	0	52.5	yes	15x15x15	24	3	34
225	504	142	683	1108	4.7	0.05	0	52.5	yes	15x15x15	24	7	58
226	504	142	683	1108	4.7	0.05	0	52.5	yes	15x15x15	24	28	89
227	504	142	683	1108	4.7	0.07	0	52.5	yes	15x15x15	24	7	55
228	504	142	683	1108	4.7	0.07	0	52.5	yes	15x15x15	24	28	85
229	504	142	683	1108	4.7	0.08	0	52.5	yes	15x15x15	24	3	39
230	504	142	683	1108	4.7	0.08	0	52.5	yes	15x15x15	24	28	83
231	504	142	683	1108	4.7	0.1	0	52.5	yes	15x15x15	24	3	37
232	504	142	683	1108	4.7	0.1	0	52.5	yes	15x15x15	24	7	60
233	504	142	683	1108	4.7	0.15	0	52.5	yes	15x15x15	24	7	56
234	504	142	683	1108	4.7	0.15	0	52.5	yes	15x15x15	24	28	86
235	1875	375	0	0	14.063	0	0	42.5	no	4x4x4	24	28	130
236	1875	375	0	0	14.063	0.1	0	42.5	no	4x4x4	24	28	152
237	1875	375	0	0	14.063	1	0	42.5	no	4x4x4	24	28	126
238	1875	375	0	0	14.063	0	0	42.5	no	4x4x4	24	28	130
239	1875	375	0	0	14.063	0	0.1	42.5	no	4x4x4	24	28	127
240	1875	375	0	0	14.063	0	0.5	42.5	no	4x4x4	24	28	92
241	1277	574	0	0	0	0	0	42.5	no	5x5x5	48	28	27.1
242	1161	522.5	0	0	0	0.5	0	42.5	no	5x5x5	48	28	41.8
243	1579	789.5	0	0	0.00	0.1	0	42.5	yes	4x4x16	24	21	61
244	1579	789.5	0	0	0.00	0	0	42.5	yes	4x4x16	24	28	66.5
245	1579	789.5	0	0	0.00	0	0	42.5	yes	4x4x16	24	21	62.3
246	1579	789.5	0	0	0.00	0.1	0	42.5	yes	4x4x16	24	28	66.2
247	1579	789.5	0	0	0.00	0.3	0	42.5	yes	4x4x16	24	3	58.7
248	1579	789.5	0	0	0.00	0	0	42.5	yes	4x4x16	24	21	66
249	1579	789.5	0	0	0.00	0.5	0	42.5	yes	4x4x16	24	3	52
250	1579	789.5	0	0	0.00	0	0	42.5	yes	4x4x16	24	21	60.5
251	1579	789.5	0	0	0.00	0.5	0	42.5	yes	4x4x16	24	28	62.5
252	675.9	270.3	1351.7	0	0	0.02	0	42.5	yes	5x5x5	24	28	59.49
253	675.9	270.3	1351.7	0	0	0.04	0	42.5	yes	5x5x5	24	28	55.659
254	675.9	270.3	1351.7	0	0	0.1	0	42.5	yes	5x5x5	24	28	55.659
255	675.9	270.3	1351.7	0	0	0.3	0	42.5	yes	5x5x5	24	28	36.783
256	450	180	1720	0	4.95	0	0	42.5	no	4x4x16	24	28	65
257	450	180	1720	0	4.95	0.5	0	42.5	no	4x4x16	24	28	71.875

258	1103	496.4	1654.8	0	1.4342	0	0	42.5	no	4x4x16	24	28	52.27
259	1103	496.4	1654.8	0	1.4342	0.5	0	42.5	yes	4x4x16	24	28	62.13

Table B3.2 COMP dataset for testing (20% of the initial set)

	Cement [kg/m³]	Water [kg/m³]	Fine aggregate [kg/m³]	Coarse aggregate [kg/m³]	Superplasticizer [kg/m³]	Nanofiller [wt%]		Cement class	Functionalization	Cross-section [cm]	Demolding age [h]	Age [h]	Compressive strength [MPa]
						CNT	CNF						
#	min/max	min/max	min/max	min/max	min/max	min/max	min/max	0/1	0/1	0/1	min/max	min/max	min/max
1	542	262.9	1490.5	0	0	0	0	42.5	no	4x4x8	24	28	31.7
2	542	262.9	1490.5	0	0	0.5	0	42.5	no	4x4x8	24	28	35.3
3	512.1	256.1	1536.3	0	2.05	0.1	0	42.5	no	4x4x16	24	28	33.1
4	1338.21	669.1	0	0	0	0.5	0	52.5	yes	4x4x16	24	28	72.13
5	1363.6	681.82	0	0	4.36	0.08	0	42.5	no	5x5x5	24	28	80
6	1363.6	681.82	0	0	19.09	0.35	0	42.5	no	5x5x5	24	28	90
7	353.7	176.86	1061.2	0	1.03	0	0.25	52.5	no	4x4x16	24	28	54.5
8	348.3	174.16	1045	0	2.02	0	0.5	52.5	no	4x4x16	24	120	61
9	1342.83	671.41	4028.5	0	15.31	0	1	52.5	no	4x4x16	24	7	46.5
10	337.8	168.88	1013.3	0	3.85	0	1	52.5	no	4x4x16	24	7	46.5
11	332.61	166.31	997.83	0	4.86	0	1.25	52.5	no	4x4x16	24	28	55
12	322.5	161.27	967.60	0	6.29	0	1.75	52.5	no	4x4x16	24	28	57.5
13	317.6	158.81	952.84	0	6.73	0	2	52.5	no	4x4x16	24	28	57.6
14	1200	600	0	0	1.8	0	0.5	52.5	no	4x4x16	24	28	47.2
15	1200	600	0	0	6.6	0	2	52.5	no	4x4x16	24	7	37.8
16	542	262.9	1490.5	0	0	0.08	0	42.5	no	4x4x16	24	3	22.3
17	542	262.9	1490.5	0	0	0.1	0	42.5	no	4x4x16	24	28	33.8
18	542	262.9	1490.5	0	0	0.5	0	42.5	no	4x4x16	24	7	27.6
19	644.7	225.6	1934	0	7.74	0.1	0	42.5	no	4x4x16	24	28	84.3
20	654.6	229.1	1964	0	7.86	0.05	0	42.5	no	4x4x16	24	90	90.4
21	509.6	229.3	688	0	0.76	0.1	0	42.5	no	4x4x16	24	28	64.7
22	517.5	232.9	698.68	0	0.78	0.05	0	42.5	no	4x4x16	24	28	65.2
23	496.6	248.3	1489.8	0	0	0.1	0	42.5	no	4x4x16	24	7	46.3
24	504.3	252.1	1512.9	0	0	0.05	0	42.5	no	4x4x16	24	28	52.9
25	504.3	252.1	1512.9	0	0	0.05	0	42.5	no	4x4x16	24	28	58.8
26	484.2	266.3	1452.5	0	0	0.1	0	42.5	no	4x4x16	24	28	51
27	491.7	270.4	1475	0	0	0.05	0	42.5	no	4x4x16	24	28	54.5
28	570	188	572	1015	0.31	0	0.31	42.5	no	30x15	24	28	64.604
29	480	191	1005	901	0.49	0	0	42.5	no	30x15	24	28	45.505
30	478	191	1008	902	0.49	0	1	42.5	no	30x15	24	28	47.71
31	478	191	1008	902	0.31	0	0.7	42.5	no	30x15	24	28	44.75
32	478	191	1008	902	0.85	0	1.5	42.5	no	30x15	24	28	51.15
33	1500	495	0	0	0	0.05	0	42.5	no	4x4x16	24	7	47.8
34	1500	495	0	0	0	0.1	0	42.5	no	4x4x16	24	28	97.2
35	1241	558.5	0	0	0	1.5	0	42.5	yes	5x5x5	24	28	59.8
36	1061.87	637.1	0	0	0	0.5	0	42.5	yes	5x5x5	24	28	56.8
37	887.6	532.6	621.34	0	0	0.1	0	42.5	yes	5x5x5	24	28	51.3
38	1028.5	462.8	719.92	0	0	0.1	0	42.5	yes	5x5x5	24	28	46.3
39	993.5	447.1	695.48	0	0	1.5	0	42.5	yes	5x5x5	24	28	78
40	869.4	521.6	608.56	0	0	1	0	42.5	yes	5x5x5	24	28	80.33
41	1200	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	30.1
42	1200	600	0	0	0	0.1	0	42.5	yes	4x4x16	48	28	32
43	1500	600	0	0	0	0.05	0	42.5	no	4x4x16	24	28	50.17
44	320.2	252.93	1921	0	0	0	0	42.5	no	7x7x7	24	28	11
45	320.2	252.93	1921	0	0	0.2	0	42.5	no	7x7x7	24	14	9.15
46	320.2	252.93	1921	0	0	0.4	0	42.5	no	7x7x7	24	28	12.85
47	320.2	252.93	1921	0	0	0.8	0	42.5	no	7x7x7	24	28	9.3
48	620	250	0	0	0	0	0	42.5	no	5x5x5	24	7	30.32
49	620	250	0	0	0	0	0	42.5	no	5x5x5	24	28	48.44
50	620	250	0	0	0	0.4	0	42.5	no	5x5x5	24	28	64.3
51	620	250	0	0	0	0.4	0	42.5	yes	5x5x5	24	7	46
52	620	250	0	0	0	0.4	0	42.5	yes	5x5x5	24	28	57.9
53	400	160	660	1168	2.4	0.05	0	52.5	yes	15x15x15	24	7	40
54	400	160	660	1168	2.4	0.07	0	52.5	yes	15x15x15	24	28	54
55	400	160	660	1168	2.4	0.08	0	52.5	yes	15x15x15	24	28	67
56	422	147	621	1284	5.06	0	0	52.5	no	15x15x15	24	3	34.1
57	422	147	621	1284	5.06	0.05	0	52.5	yes	15x15x15	24	3	31.4
58	422	147	621	1284	5.06	0.08	0	52.5	yes	15x15x15	24	7	51.4

59	422	147	621	1284	5.06	0.15	0	52.5	yes	15x15x15	24	7	52.5
60	504	142	683	1108	4.7	0.07	0	52.5	yes	15x15x15	24	3	34
61	504	142	683	1108	4.7	0.08	0	52.5	yes	15x15x15	24	7	54
62	504	142	683	1108	4.7	0.1	0	52.5	yes	15x15x15	24	28	92
63	1875	375	0	0	14.06	0.5	0	42.5	no	4x4x4	24	28	144
64	1875	375	0	0	14.06	0	0.5	42.5	no	4x4x4	24	28	128
65	1579	789.5	0	0	0.00	0	0	42.5	yes	4x4x16	24	3	54.9
66	1579	789.5	0	0	0.00	0.1	0	42.5	yes	4x4x16	24	3	60.5
67	1579	789.5	0	0	0.00	0.3	0	42.5	yes	4x4x16	24	28	67.1
68	675.9	270.3	1351.7	0	0	0.08	0	42.5	yes	5x5x5	24	28	55.34
69	450	180	1720	0	4.95	0.5	0	42.5	no	4x4x16	24	28	76.25
70	380	121.6	547.2	839.8	0	0.1	0	42.5	no	7x14	24	28	66
71	474	237	793	793	0	0	0	42.5	no	7.5x15	24	28	39.9

Table B3.3 FLEX dataset for repeated training (80% of the initial set)

	Cement [kg/m^3]	Water [kg/m^3]	Fine aggregate [kg/m^3]	Coarse aggregate [kg/m^3]	Super plasticizer [kg/m^3]	Nanofiler wt%		Cement class	Functio nalization	Cross-section [cm]	Demolding age [h]	Age [h]	Flexural strength [MPa]
						CNT	CNF						
#	min/max	min/max	min/max	min/max	min/max	min/max	min/max	0/1	0/1	0/1	min/max	min/max	min/max
1	1200	600	0	0	0	0	0	42.5	no	2x2x8	18	3	3.86
2	1200	600	0	0	0	0	0	42.5	no	2x2x8	18	7	4.89
3	1200	600	0	0	0	0	0	42.5	no	2x2x8	18	28	5.43
4	1200	600	0	0	0	0.048	0	42.5	no	2x2x8	18	3	4.35
5	1200	600	0	0	0	0.048	0	42.5	no	2x2x8	18	28	6.181
6	1200	600	0	0	0	0.048	0	42.5	no	2x2x8	18	7	5.83
7	1200	600	0	0	0	0.048	0	42.5	no	2x2x8	18	28	6.75
8	1200	600	0	0	0	0.008	0	42.5	no	2x2x8	18	3	5.055
9	1200	600	0	0	0	0.008	0	42.5	no	2x2x8	18	7	5.83
10	1200	600	0	0	0	0.008	0	42.5	no	2x2x8	18	3	4.45
11	1200	600	0	0	0	0.008	0	42.5	no	2x2x8	18	28	6.66
12	542	262.87	1490.5	0	0	0	0	42.5	no	4x4x16	24	3	2.18
13	542	262.87	1490.5	0	0	0	0	42.5	no	4x4x16	24	7	3.23
14	542	262.87	1490.5	0	0	0.1	0	42.5	no	4x4x16	24	3	4.97
15	542	262.87	1490.5	0	0	0.1	0	42.5	no	4x4x16	24	7	5.83
16	542	262.87	1490.5	0	0	0.1	0	42.5	no	4x4x16	24	28	11.1
17	542	262.87	1490.5	0	0	0.5	0	42.5	no	4x4x16	24	7	4.77
18	542	262.87	1490.5	0	0	0.5	0	42.5	no	4x4x16	24	28	8.6
19	542	262.87	1490.5	0	0	0	0.1	42.5	no	4x4x16	24	3	3.57
20	542	262.87	1490.5	0	0	0	0.1	42.5	no	4x4x16	24	7	7.69
21	542	262.87	1490.5	0	0	0	0.1	42.5	no	4x4x16	24	28	12.2
22	380	193.8	999.4	775.2	0	0.1	0	42.5	no	7x8x38	24	28	10
23	380	193.8	999.4	775.2	0		0.1	42.5	no	7x8x38	24	28	9.9
24	512.1	256.05	1536.3	0	2.0484	0	0	42.5	no	4x4x16	24	28	5.9
25	512.1	256.05	1536.3	0	2.0484	0.1	0	42.5	no	4x4x16	24	28	10.5
26	512.1	256.05	1536.3	0	2.0484	0.1	0	42.5	yes	4x4x16	24	28	12.9
27	512.1	256.05	1536.3	0	2.0484	0.1	0	42.5	yes	4x4x16	24	28	10.6
28	512.1	256.05	1536.3	0	2.0484	0.1	0	42.5	yes	4x4x16	24	28	8.9
29	1338.2	669.107	0	0	0	0.5	0	52.5	no	4x4x16	24	28	9.56
30	1338.2	669.107	0	0	0	0.5	0	52.5	yes	4x4x16	24	28	9.97
31	1363.6	681.82	0	0	0	0	0	42.5	no	4x4x16	24	28	10.2
32	1363.6	681.82	0	0	1.64	0.03	0	42.5	no	4x4x16	24	28	11.1
33	1363.6	681.82	0	0	4.36	0.08	0	42.5	no	4x4x16	24	28	10.8
34	1363.6	681.82	0	0	13.64	0.25	0	42.5	no	4x4x16	24	28	16.1
35	1363.6	681.82	0	0	27.27	0.5	0	42.5	no	4x4x16	24	28	16.4
36	359.2	179.6	1077.6	0	0	0	0	52.5	no	4x4x16	24	7	9.5
37	359.2	179.6	1077.6	0	0.00	0	0	52.5	no	4x4x16	24	28	10.35
38	359.2	179.6	1077.6	0	0.00	0	0	52.5	no	4x4x16	24	120	11.75
39	353.7	176.86	1061.2	0	1.03	0	0.25	52.5	no	4x4x16	24	7	9.8
40	353.7	176.86	1061.2	0	1.03	0	0.25	52.5	no	4x4x16	24	28	10.2
41	348.3	174.16	1045	0	2.02	0	0.5	52.5	no	4x4x16	24	7	9.75
42	348.3	174.16	1045	0	2.02	0	0.5	52.5	no	4x4x16	24	28	10.4
43	343	171.50	1029	0	2.95	0	0.75	52.5	no	4x4x16	24	7	10.1
44	343	171.50	1029	0	2.95	0	0.75	52.5	no	4x4x16	24	28	11.1
45	343	171.50	1029	0	2.95	0	0.75	52.5	no	4x4x16	24	120	11.8
46	337.8	168.88	1013.3	0	3.85	0	1	52.5	no	4x4x16	24	7	10
47	337.8	168.88	1013.3	0	3.85	0	1	52.5	no	4x4x16	24	28	11.3

48	337.8	168.88	1013.3	0	3.85	0	1	52.5	no	4x4x16	24	120	11.7
49	332.6	166.31	997.83	0	4.86	0	1.25	52.5	no	4x4x16	24	7	10.05
50	332.6	166.31	997.83	0	4.86	0	1.25	52.5	no	4x4x16	24	120	11.65
51	327.5	163.77	982.60	0	5.86	0	1.5	52.5	no	4x4x16	24	7	9.9
52	327.5	163.77	982.60	0	5.86	0	1.5	52.5	no	4x4x16	24	28	11.35
53	327.5	163.77	982.60	0	5.86	0	1.5	52.5	no	4x4x16	24	120	11.5
54	322.5	161.27	967.60	0	6.29	0	1.75	52.5	no	4x4x16	24	28	11.05
55	322.5	161.27	967.60	0	6.29	0	1.75	52.5	no	4x4x16	24	120	11.55
56	317.6	158.81	952.84	0	6.73	0	2	52.5	no	4x4x16	24	7	9.5
57	317.6	158.81	952.84	0	6.73	0	2	52.5	no	4x4x16	24	28	11.45
58	317.6	158.81	952.84	0	6.73	0	2	52.5	no	4x4x16	24	120	11.6
59	542	262.87	1490.5	0	0	0	0	42.5	no	4x4x16	24	3	4.1
60	542	262.87	1490.5	0	0	0	0	42.5	no	4x4x16	24	7	5.1
61	542	262.87	1490.5	0	0	0.08	0	42.5	no	4x4x16	24	3	6.4
62	542	262.87	1490.5	0	0	0.08	0	42.5	no	4x4x16	24	7	7.5
63	542	262.87	1490.5	0	0	0.08	0	42.5	no	4x4x16	24	28	10.3
64	542	262.87	1490.5	0	0	0.1	0	42.5	no	4x4x16	24	7	8.2
65	542	262.87	1490.5	0	0	0.1	0	42.5	no	4x4x16	24	28	11.1
66	542	262.87	1490.5	0	0	0.3	0	42.5	no	4x4x16	24	3	4.8
67	542	262.87	1490.5	0	0	0.3	0	42.5	no	4x4x16	24	7	6.7
68	542	262.87	1490.5	0	0	0.5	0	42.5	no	4x4x16	24	3	4.7
69	542	262.87	1490.5	0	0	0.5	0	42.5	no	4x4x16	24	7	6.2
70	664.8	232.68	1994.4	0	7.98	0	0	42.5	no	4x4x16	24	7	9.6
71	664.8	232.68	1994.4	0	7.98	0	0	42.5	no	4x4x16	24	28	10.3
72	664.8	232.68	1994.4	0	7.98	0	0	42.5	no	4x4x16	24	90	10.4
73	644.7	225.63	1934	0	7.74	0.1	0	42.5	no	4x4x16	24	28	13.1
74	644.7	225.63	1934	0	7.74	0.1	0	42.5	no	4x4x16	24	90	13.3
75	654.7	229.13	1964	0	7.86	0.05	0	42.5	no	4x4x16	24	7	10.9
76	654.7	229.13	1964	0	7.86	0.05	0	42.5	no	4x4x16	24	90	12
77	654.7	229.13	1964	0	7.86	0.05	0	42.5	no	4x4x16	24	7	12.1
78	654.7	229.13	1964	0	7.86	0.05	0	42.5	no	4x4x16	24	28	13.3
79	654.7	229.13	1964	0	7.86	0.05	0	42.5	no	4x4x16	24	90	13.6
80	525.6	236.5	709.5	0	0.79	0	0	42.5	no	4x4x16	24	7	7.1
81	525.6	236.5	709.5	0	0.79	0	0	42.5	no	4x4x16	24	90	9.6
82	509.6	229.34	688	0	0.76	0.1	0	42.5	no	4x4x16	24	7	9.3
83	509.6	229.34	688	0	0.76	0.1	0	42.5	no	4x4x16	24	28	10.6
84	517.5	232.89	698.7	0	0.78	0.05	0	42.5	no	4x4x16	24	7	7.9
85	517.5	232.89	698.7	0	0.78	0.05	0	42.5	no	4x4x16	24	28	9.9
86	517.5	232.89	698.7	0	0.78	0.05	0	42.5	no	4x4x16	24	90	10.2
87	517.5	232.89	698.7	0	0.78	0.05	0	42.5	no	4x4x16	24	7	9.3
88	517.5	232.89	698.7	0	0.78	0.05	0	42.5	no	4x4x16	24	28	10.5
89	517.5	232.89	698.7	0	0.78	0.05	0	42.5	no	4x4x16	24	90	10.6
90	512.1	256.05	1536.3	0	0	0	0	42.5	no	4x4x16	24	28	8.3
91	512.1	256.05	1536.3	0	0	0	0	42.5	no	4x4x16	24	90	9.2
92	496.6	248.29	1489.8	0	0	0.1	0	42.5	no	4x4x16	24	7	9
93	496.6	248.29	1489.8	0	0	0.1	0	42.5	no	4x4x16	24	28	9.9
94	496.6	248.29	1489.8	0	0	0.1	0	42.5	no	4x4x16	24	90	10.2
95	504.3	252.14	1512.9	0	0	0.05	0	42.5	no	4x4x16	24	7	7.4
96	504.3	252.14	1512.9	0	0	0.05	0	42.5	no	4x4x16	24	28	8.8
97	504.3	252.14	1512.9	0	0	0.05	0	42.5	no	4x4x16	24	90	9.2
98	504.3	252.14	1512.9	0	0	0.05	0	42.5	no	4x4x16	24	7	8.2
99	504.3	252.14	1512.9	0	0	0.05	0	42.5	no	4x4x16	24	90	10.1
100	499.3	274.62	1497.9	0	0	0	0	42.5	no	4x4x16	24	7	6.5
101	499.3	274.62	1497.9	0	0	0	0	42.5	no	4x4x16	24	28	7.6
102	484.2	266.3	1452.5	0	0	0.1	0	42.5	no	4x4x16	24	7	8.3
103	484.2	266.3	1452.5	0	0	0.1	0	42.5	no	4x4x16	24	28	9.2
104	484.2	266.3	1452.5	0	0	0.1	0	42.5	no	4x4x16	24	90	9.3
105	491.7	270.42	1475	0	0	0.05	0	42.5	no	4x4x16	24	28	7.8
106	491.7	270.42	1475	0	0	0.05	0	42.5	no	4x4x16	24	90	8.5
107	491.7	270.42	1475	0	0	0.05	0	42.5	no	4x4x16	24	7	7.8
108	491.7	270.42	1475	0	0	0.05	0	42.5	no	4x4x16	24	28	8.8
109	491.7	270.42	1475	0	0	0.05	0	42.5	no	4x4x16	24	90	9.3
110	1500	495	0	0	0	0	0	42.5	no	4x4x16	24	28	4
111	1500	495	0	0	0	0.025	0	42.5	no	4x4x16	24	28	4.3
112	1500	495	0	0	0	0.05	0	42.5	no	4x4x16	24	28	4.6
113	1500	495	0	0	0	0.2	0	42.5	no	4x4x16	24	28	5.6
114	1200	600	0	0	0	0	0	42.5	no	4x4x16	24	28	7.15

115	1200	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	5.21
116	1200	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	6.35
117	1200	600	0	0	0	0.08	0	42.5	no	4x4x16	24	28	7.37
118	1200	600	0	0	0	0.1	0	42.5	yes	4x4x16	48	28	7.09
119	1200	600	0	0	0	0.1	0	42.5	yes	4x4x16	48	28	7.09
120	1500	600	0	0	0	0	0	42.5	no	4x4x16	24	28	7.04
121	1500	600	0	0	0	0.05	0	42.5	no	4x4x16	24	28	7.83
122	1500	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	7.25
123	1500	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	8.25
124	1579	789.48	0	0	0	0.05	0	52.5	yes	2.5x4x8	576	28	10.47
125	1579	789.48	0	0	0	0.05	0	52.5	yes	2.5x4x8	576	28	12.61
126	1579	789.48	0	0	0	0.05	0	52.5	yes	2.5x4x8	576	28	8.57
127	496	272.8	1488	0	0	0	0	42.5	no	4x4x16	24	28	3.28
128	496	272.8	1488	0	0	0.05	0	42.5	no	4x4x16	24	28	3.31
129	496	272.8	1488	0	0	0.1	0	42.5	no	4x4x16	24	28	3.5
130	496	272.8	1488	0	0	0.15	0	42.5	no	4x4x16	24	28	4.2
131	400	160	660	1168	2.4	0	0	52.5	no	15x15x15	24	7	2.68
132	400	160	660	1168	2.4	0	0	52.5	no	15x15x15	24	28	4.85
133	400	160	660	1168	2.4	0.05	0	52.5	yes	15x15x15	24	7	3.61
134	400	160	660	1168	2.4	0.07	0	52.5	yes	15x15x15	24	7	3.98
135	400	160	660	1168	2.4	0.08	0	52.5	yes	15x15x15	24	7	4.57
136	400	160	660	1168	2.4	0.08	0	52.5	yes	15x15x15	24	28	9.2
137	400	160	660	1168	2.4	0.1	0	52.5	yes	15x15x15	24	7	4.2
138	422	147	621	1284	5.06	0	0	52.5	no	15x15x15	24	7	3.04
139	422	147	621	1284	5.06	0	0	52.5	no	15x15x15	24	28	5.2
140	422	147	621	1284	5.06	0.05	0	52.5	yes	15x15x15	24	7	4.24
141	422	147	621	1284	5.06	0.05	0	52.5	yes	15x15x15	24	28	6.57
142	422	147	621	1284	5.06	0.07	0	52.5	yes	15x15x15	24	28	7.82
143	422	147	621	1284	5.06	0.08	0	52.5	yes	15x15x15	24	7	5.12
144	422	147	621	1284	5.06	0.08	0	52.5	yes	15x15x15	24	28	9.64
145	422	147	621	1284	5.06	0.1	0	52.5	yes	15x15x15	24	7	4.61
146	504	142	683	1108	4.7	0	0	52.5	no	15x15x15	24	7	3.12
147	504	142	683	1108	4.7	0	0	52.5	no	15x15x15	24	28	5.35
148	504	142	683	1108	4.7	0.05	0	52.5	yes	15x15x15	24	7	4.35
149	504	142	683	1108	4.7	0.07	0	52.5	yes	15x15x15	24	7	4.68
150	504	142	683	1108	4.7	0.07	0	52.5	yes	15x15x15	24	28	7.91
151	504	142	683	1108	4.7	0.08	0	52.5	yes	15x15x15	24	7	6.54
152	504	142	683	1108	4.7	0.08	0	52.5	yes	15x15x15	24	28	9.74
153	504	142	683	1108	4.7	0.1	0	52.5	yes	15x15x15	24	28	8.21
154	1579	789.48	0	0	0.00	0	0	42.5	yes	4x4x16	24	3	9.47
155	1579	789.48	0	0	0.00	0.1	0	42.5	yes	4x4x16	24	21	9.65
156	1579	789.48	0	0	0.00	0	0	42.5	yes	4x4x16	24	28	10.1
157	1579	789.48	0	0	0.00	0.1	0	42.5	yes	4x4x16	24	3	10.35
158	1579	789.48	0	0	0.00	0.1	0	42.5	yes	4x4x16	24	28	11.4
159	1579	789.48	0	0	0.00	0.3	0	42.5	yes	4x4x16	24	3	10.5
160	1579	789.48	0	0	0.00	0	0	42.5	yes	4x4x16	24	21	11.1
161	1579	789.48	0	0	0.00	0.5	0	42.5	yes	4x4x16	24	3	8.4
162	1579	789.48	0	0	0.00	0	0	42.5	yes	4x4x16	24	21	9.55
163	1579	789.48	0	0	0.00	0.5	0	42.5	yes	4x4x16	24	28	10.3
164	450	180	1720	0	4.95	0.5	0	42.5	no	4x4x16	24	28	10.1
165	450	180	1720	0	4.95	0.5	0	42.5	no	4x4x16	24	28	8.2
166	1103.2	496.44	1654.8	0	1.4342	0	0	42.5	no	4x4x16	24	28	6.69
167	1103.2	496.44	1654.8	0	1.4342	0.5	0	42.5	yes	4x4x16	24	28	8.37

Table B3.4 FLEX dataset for testing (20% of the initial set)

	Cement [kg/m^3]	Water [kg/m^3]	Fine aggregate [kg/m^3]	Coarse aggregate [kg/m^3]	Super plasticizer [kg/m^3]	Nanofiler wt%		Cement class	Functio nalization	Cross-section [cm]	Demolding age [h]	Age [h]	Flexural strength [MPa]
						CNT	CNF						
#	min/max	min/max	min/max	min/max	min/max	min/max	min/max	0/1	0/1	0/1	min/max	min/max	min/max
1	1200	600	0	0	0	0.048	0	42.5	no	2x2x8	18	7	5.56
2	1200	600	0	0	0	0.048	0	42.5	no	2x2x8	18	3	4.74
3	1200	600	0	0	0	0.008	0	42.5	no	2x2x8	18	28	6.64
4	1200	600	0	0	0	0.008	0	42.5	no	2x2x8	18	7	5.61
5	542	262.87	1490.5	0	0	0	0	42.5	no	4x4x16	24	28	5.9
6	542	262.87	1490.5	0	0	0.5	0	42.5	no	4x4x16	24	3	2.35
7	380	193.8	999.4	775.2	0	0	0	42.5	no	7x8x38	24	28	6.7
8	512.10	256	1536.3	0	2.05	0.1	0	42.5	no	4x4x16	24	28	10.2

9	1363.6	681.82	0	0	8.18	0.15	0	42.5	no	4x4x16	24	28	13.6
10	1363.6	681.82	0	0	19.09	0.35	0	42.5	no	4x4x16	24	28	16.3
11	353.72	176.86	1061.2	0	1.03	0	0.25	52.5	no	4x4x16	24	120	11.3
12	348.32	174.16	1045	0	2.02	0	0.5	52.5	no	4x4x16	24	120	11.85
13	332.61	166.31	997.83	0	4.86	0	1.25	52.5	no	4x4x16	24	28	11.25
14	322.53	161.27	967.60	0	6.29	0	1.75	52.5	no	4x4x16	24	7	9.6
15	542	262.87	1490.5	0	0	0	0	42.5	no	4x4x16	24	28	5.9
16	542	262.87	1490.5	0	0	0.1	0	42.5	no	4x4x16	24	3	6.9
17	542	262.87	1490.5	0	0	0.3	0	42.5	no	4x4x16	24	28	9.1
18	542	262.87	1490.5	0	0	0.5	0	42.5	no	4x4x16	24	28	8.6
19	644.66	225.63	1934	0	7.74	0.1	0	42.5	no	4x4x16	24	7	11.8
20	654.65	229.13	1964	0	7.86	0.05	0	42.5	no	4x4x16	24	28	12.7
21	525.56	236.50	709.51	0	0.79	0	0	42.5	no	4x4x16	24	28	8.9
22	509.64	229.34	688	0	0.76	0.1	0	42.5	no	4x4x16	24	90	11.1
23	512.10	256	1536.3	0	0	0	0	42.5	no	4x4x16	24	7	6.8
24	504.28	252.14	1512.9	0	0	0.05	0	42.5	no	4x4x16	24	28	9.8
25	499.30	274.62	1497.9	0	0	0	0	42.5	no	4x4x16	24	90	8.4
26	491.68	270.42	1475	0	0	0.05	0	42.5	no	4x4x16	24	7	7.2
27	1500	495	0	0	0	0.1	0	42.5	no	4x4x16	24	28	5.2
28	1200	600	0	0	0	0.1	0	42.5	no	4x4x16	24	28	6
29	1500	600	0	0	0	0.05	0	42.5	no	4x4x16	24	28	6.75
30	1579	789.48	0	0	0	0	0	52.5	yes	2.5x4x8	576	28	5.52
31	400	160	660	1168	2.4	0.05	0	52.5	yes	15x15x15	24	28	6.25
32	400	160	660	1168	2.4	0.07	0	52.5	yes	15x15x15	24	28	7.37
33	400	160	660	1168	2.4	0.1	0	52.5	yes	15x15x15	24	28	8.42
34	422	147	621	1284	5.06	0.07	0	52.5	yes	15x15x15	24	7	4.52
35	422	147	621	1284	5.06	0.1	0	52.5	yes	15x15x15	24	28	8.32
36	504	142	683	1108	4.7	0.05	0	52.5	yes	15x15x15	24	28	6.68
37	504	142	683	1108	4.7	0.1	0	52.5	yes	15x15x15	24	7	4.62
38	1579	789.48	0	0	0	0	0	42.5	yes	4x4x16	24	21	10.45
39	1579	789.48	0	0	0	0.3	0	42.5	yes	4x4x16	24	28	11.7
40	450	180	1720	0	4.95	0		42.5	no	4x4x16	24	28	7.5

Table B3.5 COMP+FLEX dataset for repeated training (80% of the initial set)

	Cement [kg/m^3]	Water [kg/m^3]	fine aggregat [kg/m^3]	Coarse aggregate [kg/m^3]	Super plasticizer [kg/m^3]	Nanofiller wt%		Cement class	Function alization	Demolding age [h]	Age [h]	Compressive strength [MPa]	Flexural strength [MPa]
						CNT	CNF						
#	min/max	min/max	min/max	min/max	min/max	min/max	min/max	0/1	0/1	min/max	min/max	min/max	min/max
1	542	262.87	1490.5	0	0	0	0	42.5	no	24	3	19.8	2.18
2	542	262.87	1490.5	0	0	0	0	42.5	no	24	7	25.6	3.23
3	542	262.87	1490.5	0	0	0.1	0	42.5	no	24	3	22.6	4.97
4	542	262.87	1490.5	0	0	0.1	0	42.5	no	24	28	33.8	11.1
5	542	262.87	1490.5	0	0	0.5	0	42.5	no	24	3	22.7	2.35
6	542	262.87	1490.5	0	0	0.5	0	42.5	no	24	7	27.6	4.77
7	542	262.87	1490.5	0	0	0	0.1	42.5	no	24	3	22.5	3.57
8	542	262.87	1490.5	0	0	0	0.1	42.5	no	24	7	25.2	7.69
9	380	193.8	999.4	775.2	0	0	0	42.5	no	24	28	45.8	6.7
10	380	193.8	999.4	775.2	0	0.1	0	42.5	no	24	28	48.5	10
11	380	193.8	999.4	775.2	0		0.1	42.5	no	24	28	46.7	9.9
12	512.1	256.05	1536.3	0	2.048	0	0	42.5	no	24	28	31.8	5.9
13	512.1	256.05	1536.3	0	2.048	0.1	0	42.5	no	24	28	33.1	10.2
14	512.1	256.05	1536.3	0	2.048	0.1	0	42.5	yes	24	28	33.9	12.9
15	1338.2	669.11	0	0	0	0.5	0	52.5	yes	24	28	72.13	9.97
16	1363.6	681.82	0	0	0	0	0	42.5	no	24	28	74.8	10.2
17	1363.6	681.82	0	0	4.36	0.08	0	42.5	no	24	28	80	10.8
18	1363.6	681.82	0	0	8.18	0.15	0	42.5	no	24	28	86.9	13.6
19	1363.6	681.82	0	0	13.64	0.25	0	42.5	no	24	28	91.8	16.1
20	1363.6	681.82	0	0	27.27	0.5	0	42.5	no	24	28	94.3	16.4
21	359.2	179.6	1077.6	0	0	0	0	52.5	no	24	7	43.5	9.5
22	359.2	179.6	1077.6	0	0.00	0	0	52.5	no	24	28	54	10.35
23	359.2	179.6	1077.6	0	0.00	0	0	52.5	no	24	120	58	11.75
24	353.7	176.86	1061.15	0	1.03	0	0.25	52.5	no	24	28	54.5	10.2
25	353.7	176.86	1061.15	0	1.03	0	0.25	52.5	no	24	120	60.6	11.3
26	348.3	174.16	1044.96	0	2.02	0	0.5	52.5	no	24	28	55	10.4
27	348.3	174.16	1044.96	0	2.02	0	0.5	52.5	no	24	120	61	11.85
28	343	171.50	1029.01	0	2.95	0	0.75	52.5	no	24	7	44	10.1
29	343	171.50	1029.01	0	2.95	0	0.75	52.5	no	24	28	55.1	11.1

30	343	171.50	1029.01	0	2.95	0	0.75	52.5	no	24	120	62.5	11.8
31	337.8	168.88	1013.30	0	3.85	0	1	52.5	no	24	7	46.5	10
32	337.8	168.88	1013.30	0	3.85	0	1	52.5	no	24	120	61.8	11.7
33	332.6	166.31	997.83	0	4.86	0	1.25	52.5	no	24	7	47.5	10.05
34	332.6	166.31	997.83	0	4.86	0	1.25	52.5	no	24	28	55	11.25
35	327.5	163.77	982.60	0	5.86	0	1.5	52.5	no	24	7	46	9.9
36	327.5	163.77	982.60	0	5.86	0	1.5	52.5	no	24	28	56.5	11.35
37	327.5	163.77	982.60	0	5.86	0	1.5	52.5	no	24	120	65	11.5
38	322.5	161.27	967.60	0	6.29	0	1.75	52.5	no	24	7	45.5	9.6
39	322.5	161.27	967.60	0	6.29	0	1.75	52.5	no	24	120	65.8	11.55
40	317.6	158.81	952.84	0	6.73	0	2	52.5	no	24	7	50	9.5
41	317.6	158.81	952.84	0	6.73	0	2	52.5	no	24	28	57.6	11.45
42	542	262.87	1490.5	0	0	0	0	42.5	no	24	3	19.95	4.1
43	542	262.87	1490.5	0	0	0	0	42.5	no	24	7	25	5.1
44	542	262.87	1490.5	0	0	0	0	42.5	no	24	28	31.7	5.9
45	542	262.87	1490.5	0	0	0.08	0	42.5	no	24	3	22.3	6.4
46	542	262.87	1490.5	0	0	0.08	0	42.5	no	24	28	33.7	10.3
47	542	262.87	1490.5	0	0	0.1	0	42.5	no	24	3	22.9	6.9
48	542	262.87	1490.5	0	0	0.1	0	42.5	no	24	7	26.2	8.2
49	542	262.87	1490.5	0	0	0.3	0	42.5	no	24	3	21.1	4.8
50	542	262.87	1490.5	0	0	0.3	0	42.5	no	24	7	28	6.7
51	542	262.87	1490.5	0	0	0.3	0	42.5	no	24	28	33.9	9.1
52	542	262.87	1490.5	0	0	0.5	0	42.5	no	24	3	22.8	4.7
53	542	262.87	1490.5	0	0	0.5	0	42.5	no	24	7	27.6	6.2
54	664.8	232.68	1994.4	0	7.978	0	0	42.5	no	24	7	68.1	9.6
55	664.8	232.68	1994.4	0	7.978	0	0	42.5	no	24	28	72.1	10.3
56	664.8	232.68	1994.4	0	7.978	0	0	42.5	no	24	90	73.6	10.4
57	644.7	225.63	1933.98	0	7.736	0.1	0	42.5	no	24	7	76.8	11.8
58	644.7	225.63	1933.98	0	7.736	0.1	0	42.5	no	24	90	86.8	13.3
59	654.7	229.13	1963.96	0	7.856	0.05	0	42.5	no	24	7	72.7	10.9
60	654.7	229.13	1963.96	0	7.856	0.05	0	42.5	no	24	28	75.8	12.7
61	654.7	229.13	1963.96	0	7.856	0.05	0	42.5	no	24	7	80.6	12.1
62	654.7	229.13	1963.96	0	7.856	0.05	0	42.5	no	24	28	88.8	13.3
63	654.7	229.13	1963.96	0	7.856	0.05	0	42.5	no	24	90	90.4	13.6
64	525.6	236.50	709.51	0	0.788	0	0	42.5	no	24	7	45.3	7.1
65	525.6	236.50	709.51	0	0.788	0	0	42.5	no	24	28	56.4	8.9
66	525.6	236.50	709.51	0	0.788	0	0	42.5	no	24	90	57.9	9.6
67	509.6	229.34	688.01	0	0.764	0.1	0	42.5	no	24	28	64.7	10.6
68	509.6	229.34	688.01	0	0.764	0.1	0	42.5	no	24	90	65.8	11.1
69	517.5	232.89	698.68	0	0.776	0.05	0	42.5	no	24	7	46.7	7.9
70	517.5	232.89	698.68	0	0.776	0.05	0	42.5	no	24	28	56.5	9.9
71	517.5	232.89	698.68	0	0.776	0.05	0	42.5	no	24	90	57.5	10.2
72	517.5	232.89	698.68	0	0.776	0.05	0	42.5	no	24	7	55.4	9.3
73	517.5	232.89	698.68	0	0.776	0.05	0	42.5	no	24	28	65.2	10.5
74	517.5	232.89	698.68	0	0.776	0.05	0	42.5	no	24	90	65.7	10.6
75	512.1	256.05	1536.3	0	0	0	0	42.5	no	24	7	38.1	6.8
76	512.1	256.05	1536.3	0	0	0	0	42.5	no	24	90	52.4	9.2
77	496.6	248.29	1489.76	0	0	0.1	0	42.5	no	24	7	46.3	9
78	496.6	248.29	1489.76	0	0	0.1	0	42.5	no	24	28	58.8	9.9
79	496.6	248.29	1489.76	0	0	0.1	0	42.5	no	24	90	61.5	10.2
80	504.3	252.14	1512.85	0	0	0.05	0	42.5	no	24	7	43	7.4
81	504.3	252.14	1512.85	0	0	0.05	0	42.5	no	24	28	52.9	8.8
82	504.3	252.14	1512.85	0	0	0.05	0	42.5	no	24	7	45.6	8.2
83	504.3	252.14	1512.85	0	0	0.05	0	42.5	no	24	28	58.8	9.8
84	504.3	252.14	1512.85	0	0	0.05	0	42.5	no	24	90	59.5	10.1
85	499.3	274.62	1497.9	0	0	0	0	42.5	no	24	7	36.9	6.5
86	499.3	274.62	1497.9	0	0	0	0	42.5	no	24	28	48.8	7.6
87	484.2	266.30	1452.52	0	0	0.1	0	42.5	no	24	7	38.9	8.3
88	484.2	266.30	1452.52	0	0	0.1	0	42.5	no	24	28	51	9.2
89	484.2	266.30	1452.52	0	0	0.1	0	42.5	no	24	90	52	9.3
90	491.7	270.42	1475.04	0	0	0.05	0	42.5	no	24	7	34.7	7.2
91	491.7	270.42	1475.04	0	0	0.05	0	42.5	no	24	90	44.7	8.5
92	491.7	270.42	1475.04	0	0	0.05	0	42.5	no	24	7	42.1	7.8
93	491.7	270.42	1475.04	0	0	0.05	0	42.5	no	24	28	54.5	8.8
94	491.7	270.42	1475.04	0	0	0.05	0	42.5	no	24	90	58.1	9.3
95	1500	495	0	0	0	0	0	42.5	no	24	28	84.8	4
96	1500	495	0	0	0	0.025	0	42.5	no	24	28	90.1	4.3

97	1500	495	0	0	0	0.05	0	42.5	no	24	28	95.6	4.6
98	1500	495	0	0	0	0.1	0	42.5	no	24	28	97.2	5.2
99	1200	600	0	0	0	0.1	0	42.5	no	24	28	20.4	5.21
100	1200	600	0	0	0	0.1	0	42.5	no	24	28	30.1	6.35
101	1200	600	0	0	0	0.1	0	42.5	no	24	28	32.4	6
102	1200	600	0	0	0	0.1	0	42.5	yes	48	28	32	7.09
103	1200	600	0	0	0	0.1	0	42.5	yes	48	28	35.4	7.09
104	1500	600	0	0	0	0	0	42.5	no	24	28	45.5	7.04
105	1500	600	0	0	0	0.05	0	42.5	no	24	28	45.92	6.75
106	1500	600	0	0	0	0.1	0	42.5	no	24	28	50.09	7.25
107	1500	600	0	0	0	0.1	0	42.5	no	24	28	55.05	8.25
108	496	272.8	1488	0	0	0	0	42.5	no	24	28	48	3.28
109	496	272.8	1488	0	0	0.1	0	42.5	no	24	28	52	3.5
110	496	272.8	1488	0	0	0.15	0	42.5	no	24	28	53	4.2
111	400	160	660	1168	2.4	0	0	52.5	no	24	7	39	2.68
112	400	160	660	1168	2.4	0	0	52.5	no	24	28	49	4.85
113	400	160	660	1168	2.4	0.05	0	52.5	yes	24	7	40	3.61
114	400	160	660	1168	2.4	0.07	0	52.5	yes	24	7	42	3.98
115	400	160	660	1168	2.4	0.07	0	52.5	yes	24	28	54	7.37
116	400	160	660	1168	2.4	0.08	0	52.5	yes	24	7	55	4.57
117	400	160	660	1168	2.4	0.08	0	52.5	yes	24	28	67	9.2
118	400	160	660	1168	2.4	0.1	0	52.5	yes	24	28	54	8.42
119	422	147	621	1284	5.06	0	0	52.5	no	24	7	38.6	3.04
120	422	147	621	1284	5.06	0	0	52.5	no	24	28	61.2	5.2
121	422	147	621	1284	5.06	0.05	0	52.5	yes	24	7	55	4.24
122	422	147	621	1284	5.06	0.05	0	52.5	yes	24	28	78	6.57
123	422	147	621	1284	5.06	0.07	0	52.5	yes	24	7	50.8	4.52
124	422	147	621	1284	5.06	0.07	0	52.5	yes	24	28	72.6	7.82
125	422	147	621	1284	5.06	0.08	0	52.5	yes	24	7	51.4	5.12
126	422	147	621	1284	5.06	0.08	0	52.5	yes	24	28	73.2	9.64
127	422	147	621	1284	5.06	0.1	0	52.5	yes	24	28	83.6	8.32
128	504	142	683	1108	4.7	0	0	52.5	no	24	7	42	3.12
129	504	142	683	1108	4.7	0	0	52.5	no	24	28	72	5.35
130	504	142	683	1108	4.7	0.05	0	52.5	yes	24	7	58	4.35
131	504	142	683	1108	4.7	0.05	0	52.5	yes	24	28	89	6.68
132	504	142	683	1108	4.7	0.07	0	52.5	yes	24	28	85	7.91
133	504	142	683	1108	4.7	0.08	0	52.5	yes	24	7	54	6.54
134	504	142	683	1108	4.7	0.08	0	52.5	yes	24	28	83	9.74
135	504	142	683	1108	4.7	0.1	0	52.5	yes	24	7	60	4.62
136	1579	789.48	0	0	0.00	0	0	42.5	yes	24	3	54.9	9.47
137	1579	789.48	0	0	0.00	0.1	0	42.5	yes	24	21	61	9.65
138	1579	789.48	0	0	0.00	0	0	42.5	yes	24	28	66.5	10.1
139	1579	789.48	0	0	0.00	0	0	42.5	yes	24	21	62.3	10.45
140	1579	789.48	0	0	0.00	0.1	0	42.5	yes	24	28	66.2	11.4
141	1579	789.48	0	0	0.00	0.3	0	42.5	yes	24	3	58.7	10.5
142	1579	789.48	0	0	0.00	0	0	42.5	yes	24	21	66	11.1
143	1579	789.48	0	0	0.00	0.5	0	42.5	yes	24	3	52	8.4
144	1579	789.48	0	0	0.00	0	0	42.5	yes	24	21	60.5	9.55
145	1579	789.48	0	0	0.00	0.5	0	42.5	yes	24	28	62.5	10.3
146	450	180	1720	0	4.95	0	0	42.5	no	24	28	65	7.5
147	450	180	1720	0	4.95	0.5	0	42.5	no	24	28	76.25	8.2
148	1103.2	496.44	1654.8	0	1.43416	0	0	42.5	no	24	28	52.27	6.69
149	1103.2	496.44	1654.8	0	1.43416	0.5	0	42.5	yes	24	28	62.13	8.37

Table B3.6 COMP+FLEX dataset for training (20% of the initial set)

	Cement [kg/m³]	Water [kg/m³]	Fine aggregat [kg/m³]	Coarse aggregate [kg/m³]	Super plasticizer [kg/m³]	Nanofiller wt%		Cement class	Function alization	Demolding age [h]	Age [h]	Compressive strength [MPa]	Flexural strength [MPa]
						CNT	CNF						
#	min/max	min/max	min/max	min/max	min/max	min/max	min/max	0/1	0/1	min/max	min/max	min/max	min/max
1	542	262.87	1490.5	0	0	0	0	42.5	no	24	28	31.7	5.9
2	542	262.87	1490.5	0	0	0.1	0	42.5	no	24	7	26.5	5.83
3	542	262.87	1490.5	0	0	0.5	0	42.5	no	24	28	35.3	8.6
4	542	262.87	1490.5	0	0	0	0.1	42.5	no	24	28	33.7	12.2
5	512.10	256.05	1536.3	0	2.05	0.1	0	42.5	no	24	28	33.5	10.5
6	1338.21	669.11	0	0	0	0.5	0	52.5	no	24	28	69.41	9.56
7	1363.64	681.82	0	0	1.64	0.03	0	42.5	no	24	28	83.1	11.1
8	1363.64	681.82	0	0	19.09	0.35	0	42.5	no	24	28	90	16.3

9	353.72	176.86	1061.15	0	1.03	0	0.25	52.5	no	24	7	43	9.8
10	348.32	174.16	1044.96	0	2.02	0	0.5	52.5	no	24	7	43.5	9.75
11	337.77	168.88	1013.30	0	3.85	0	1	52.5	no	24	28	54.8	11.3
12	332.61	166.31	997.83	0	4.86	0	1.25	52.5	no	24	120	62.5	11.65
13	322.53	161.27	967.60	0	6.29	0	1.75	52.5	no	24	28	57.5	11.05
14	317.61	158.81	952.84	0	6.73	0	2	52.5	no	24	120	67	11.6
15	542	262.87	1490.5	0	0	0.08	0	42.5	no	24	7	26.1	7.5
16	542	262.87	1490.5	0	0	0.1	0	42.5	no	24	28	33.8	11.1
17	542	262.87	1490.5	0	0	0.5	0	42.5	no	24	28	35.3	8.6
18	644.66	225.63	1934	0	7.74	0.1	0	42.5	no	24	28	84.3	13.1
19	654.65	229.13	1964	0	7.86	0.05	0	42.5	no	24	90	77.9	12
20	509.64	229.34	688	0	0.76	0.1	0	42.5	no	24	7	53.2	9.3
21	512.10	256.05	1536.3	0	0	0	0	42.5	no	24	28	51.3	8.3
22	504.28	252.14	1512.85	0	0	0.05	0	42.5	no	24	90	56.5	9.2
23	499.30	274.62	1497.90	0	0	0	0	42.5	no	24	90	50.6	8.4
24	491.68	270.42	1475	0	0	0.05	0	42.5	no	24	28	44.3	7.8
25	1200	600	0	0	0	0	0	42.5	no	24	28	35.6	7.15
26	1200	600	0	0	0	0.08	0	42.5	no	24	28	35	7.37
27	1500	600	0	0	0	0.05	0	42.5	no	24	28	50.17	7.83
28	496	272.8	1488	0	0	0.05	0	42.5	no	24	28	55	3.31
29	400	160	660	1168	2.4	0.05	0	52.5	yes	24	28	45	6.25
30	400	160	660	1168	2.4	0.1	0	52.5	yes	24	7	48	4.2
31	422	147	621	1284	5.06	0.1	0	52.5	yes	24	7	59.3	4.61
32	504	142	683	1108	4.7	0.07	0	52.5	yes	24	7	55	4.68
33	504	142	683	1108	4.7	0.1	0	52.5	yes	24	28	92	8.21
34	1579	789.48	0	0	0.00	0.3	0	42.5	yes	24	28	67.1	11.7
35	450	180	1720	0	4.95	0.5	0	42.5	no	24	28	71.88	10.1
36	1579	789.48	0	0	0.00	0.1	0	42.5	yes	24	3	60.5	10.35
37	1200	600	0	0	0	0.1	0	42.5	yes	48	28	32	7.09

Table B3.7 Group II C+F dataset for repeated training (80% of the initial set)

	Cement [kg/m3]	Water [kg/m3]	Fine aggregate [kg/m3]	Coarse aggregate [kg/m3]	Superplasticizer [kg/m3]	Nanofiller [wt%]		Cement class	Compressive strength [MPa]	Flexural strength [MPa]
						CNT	CNF			
#	min/max	min/max	min/max	min/max	min/max	min/max	min/max	0/1	min/max	min/max
1	1363.64	681.82	0	0	0	0	0	52.5	51.13	13.32
2	1358.55	679.28	0	0	0	0.1	0	52.5	52.17	12.06
3	1353.47	676.74	0	0	0	0.2	0	52.5	52.29	11.37
4	1350.92	675.46	0	0	0	0.25	0	52.5	52.06	12.99
5	1348.38	674.19	0	0	0	0.3	0	52.5	52.29	13.10
6	1345.84	672.92	0	0	0	0.35	0	52.5	52.40	14.45
7	1343.30	671.65	0	0	0	0.4	0	52.5	52.37	15.35
8	1340.75	670.38	0	0	0	0.45	0	52.5	52.44	15.88
9	1338.21	669.11	0	0	0	0.5	0	52.5	52.51	16.61
10	1500	495	0	0	0	0	0	42.5	76.47	6.12
11	1500	495	0	0	0	0.01	0	42.5	76.86	6.03
12	1500	495	0	0	0	0.03	0	42.5	77.36	5.88
13	1500	495	0	0	0	0.04	0	42.5	77.52	5.83
14	1500	495	0	0	0	0.05	0	42.5	77.64	5.77
15	1500	495	0	0	0	0.07	0	42.5	77.73	5.66
16	1500	495	0	0	0	0.08	0	42.5	77.90	5.60
17	1500	495	0	0	0	0.09	0	42.5	77.93	5.56
18	1500	495	0	0	0	0.1	0	42.5	77.97	5.52
19	1200	600	0	0	0	0.01	0	42.5	32.24	10.80
20	1200	600	0	0	0	0.02	0	42.5	32.35	10.69
21	1200	600	0	0	0	0.03	0	42.5	32.39	10.69
22	1200	600	0	0	0	0.04	0	42.5	32.53	10.44
23	1200	600	0	0	0	0.05	0	42.5	32.56	10.36
24	1200	600	0	0	0	0.07	0	42.5	32.65	10.17
25	1200	600	0	0	0	0.08	0	42.5	32.71	10.11
26	1200	600	0	0	0	0.1	0	42.5	32.62	9.98
27	1500	600	0	0	0	0	0	42.5	41.03	10.78
28	1500	600	0	0	0	0.01	0	42.5	41.21	10.63
29	1500	600	0	0	0	0.02	0	42.5	41.33	10.52
30	1500	600	0	0	0	0.03	0	42.5	41.47	10.39
31	1500	600	0	0	0	0.05	0	42.5	41.64	10.18
32	1500	600	0	0	0	0.06	0	42.5	41.64	10.12
33	1500	600	0	0	0	0.07	0	42.5	41.76	9.98
34	1500	600	0	0	0	0.09	0	42.5	41.79	9.86
35	1500	600	0	0	0	0.1	0	42.5	41.79	9.77
36	1578.95	789.475	0	0	0	0	0	42.5	59.97	15.46

37	1578.95	789.475	0	0	0	0.1	0	42.5	61.12	14.02
38	1578.95	789.475	0	0	0	0.15	0	42.5	61.11	13.66
39	1578.95	789.475	0	0	0	0.2	0	42.5	61.26	13.29
40	1578.95	789.475	0	0	0	0.3	0	42.5	61.03	15.76
41	1578.95	789.475	0	0	0	0.35	0	42.5	60.76	17.57
42	1578.95	789.475	0	0	0	0.4	0	42.5	60.81	18.52
43	1578.95	789.475	0	0	0	0.45	0	42.5	60.36	19.64
44	1578.95	789.475	0	0	0	0.5	0	42.5	60.04	20.22
45	542	262.87	1490.5	0	0	0	0	42.5	28.59	9.03
46	542	262.87	1490.5	0	0	0.05	0	42.5	28.79	8.83
47	542	262.87	1490.5	0	0	0.1	0	42.5	28.94	8.66
48	542	262.87	1490.5	0	0	0.15	0	42.5	28.94	8.55
49	542	262.87	1490.5	0	0	0.2	0	42.5	29.05	8.41
50	542	262.87	1490.5	0	0	0.25	0	42.5	29.17	8.26
51	542	262.87	1490.5	0	0	0.3	0	42.5	29.15	8.19
52	542	262.87	1490.5	0	0	0.35	0	42.5	29.14	8.06
53	542	262.87	1490.5	0	0	0.45	0	42.5	29.04	7.90
54	542	262.87	1490.5	0	0	0.5	0	42.5	29.03	7.81
55	512.10	256.05	1536.30	0	0	0	0	42.5	46.26	12.71
56	504.28	252.14	1512.85	0	0	0.05	0	42.5	46.57	12.45
57	500.44	250.22	1501.31	0	0	0.075	0	42.5	46.65	12.34
58	496.59	248.29	1489.76	0	0	0.1	0	42.5	46.78	12.25
59	499.30	274.62	1497.90	0	0	0	0	42.5	44.01	11.63
60	491.68	270.42	1475.04	0	0	0.05	0	42.5	44.28	11.40
61	487.93	268.36	1463.78	0	0	0.075	0	42.5	44.40	11.28
62	484.17	266.30	1452.52	0	0	0.1	0	42.5	44.49	11.20
63	512.1	256.05	1536.3	0	2.05	0.025	0	42.5	28.79	8.93
64	512.1	256.05	1536.3	0	2.05	0.05	0	42.5	28.87	8.85
65	512.1	256.05	1536.3	0	2.05	0.075	0	42.5	28.95	8.76
66	359.20	179.6	1077.6	0	0	0	0	52.5	48.70	15.84
67	353.72	176.87	1061.15	0	0.21	0	0.05	52.5	48.78	15.70
68	353.72	176.86	1061.15	0	0.62	0	0.15	52.5	48.89	15.44
69	353.72	176.86	1061.15	0	0.82	0	0.2	52.5	48.98	15.30
70	353.72	176.86	1061.15	0	1.03	0	0.25	52.5	49.02	15.13
71	348.32	174.17	1044.96	0	1.22	0	0.3	52.5	48.95	15.03
72	348.32	174.16	1044.96	0	1.42	0	0.35	52.5	49.11	14.89
73	348.32	174.16	1044.96	0	1.62	0	0.4	52.5	49.03	14.69
74	348.32	174.16	1044.96	0	1.82	0	0.45	52.5	49.10	14.61
75	343.01	171.51	1029.01	0	2.15	0	0.55	52.5	48.88	14.51
76	343	171.51	1029.01	0	2.35	0	0.6	52.5	49.11	14.31
77	343	171.50	1029.01	0	2.55	0	0.65	52.5	49.02	14.14
78	343	171.50	1029.01	0	2.75	0	0.7	52.5	49.09	13.93
79	343	171.50	1029.01	0	2.95	0	0.75	52.5	48.99	14.06
80	337.77	168.89	1013.3	0	3.25	0	0.85	52.5	48.64	13.68
81	337.77	168.89	1013.3	0	3.45	0	0.9	52.5	48.62	14.06
82	337.77	168.88	1013.3	0	3.65	0	0.95	52.5	49.09	13.59
83	337.77	168.88	1013.3	0	3.85	0	1	52.5	48.47	13.70
84	332.61	166.31	997.83	0	4.06	0	1.05	52.5	48.77	13.31
85	332.61	166.31	997.83	0	4.26	0	1.1	52.5	48.60	14.39
86	332.61	166.31	997.83	0	4.66	0	1.2	52.5	48.84	14.21
87	332.61	166.31	997.83	0	4.86	0	1.25	52.5	48.27	15.82
88	327.54	163.77	982.6	0	5.27	0	1.35	52.5	49.13	14.94
89	327.54	163.77	982.6	0	5.47	0	1.4	52.5	49.07	16.41
90	327.54	163.77	982.6	0	5.66	0	1.45	52.5	48.93	16.35
91	327.53	163.77	982.6	0	5.86	0	1.5	52.5	48.48	17.60
92	322.54	161.27	967.6	0	5.49	0	1.55	52.5	47.89	18.46
93	322.54	161.27	967.6	0	5.69	0	1.6	52.5	47.67	19.85
94	322.54	161.27	967.6	0	5.89	0	1.65	52.5	48.09	18.66
95	322.54	161.27	967.6	0	6.09	0	1.7	52.5	47.83	20.43
96	322.53	161.27	967.6	0	6.29	0	1.75	52.5	47.53	21.03
97	317.61	158.81	952.84	0	6.14	0	1.85	52.5	49.70	17.09
98	317.61	158.81	952.84	0	6.34	0	1.9	52.5	49.80	17.15
99	317.61	158.81	952.84	0	6.53	0	1.95	52.5	49.92	17.35
100	317.61	158.81	952.84	0	6.73	0	2	52.5	49.86	17.56
101	664.80	232.68	1994.4	0	7.98	0	0	42.5	65.02	15.77
102	659.73	230.90	1979.18	0	7.92	0.025	0	42.5	65.26	15.59
103	654.65	229.13	1963.96	0	7.86	0.05	0	42.5	65.43	15.45
104	649.66	227.38	1948.97	0	7.80	0.075	0	42.5	65.59	15.33
105	521.48	234.66	704.02	0	0.79	0.025	0	42.5	51.06	13.47
106	517.54	232.89	698.68	0	0.78	0.05	0	42.5	51.19	13.35
107	513.60	231.12	693.34	0	0.77	0.075	0	42.5	51.30	13.22
108	450	180	1720	0	4.95	0	0	42.5	58.62	11.48
109	450	180	1720	0	4.95	0.05	0	42.5	58.98	11.27
110	450	180	1720	0	4.95	0.1	0	42.5	59.12	11.14
111	450	180	1720	0	4.95	0.15	0	42.5	59.39	10.92

112	450	180	1720	0	4.95	0.25	0	42.5	59.61	10.66
113	450	180	1720	0	4.95	0.3	0	42.5	59.71	10.61
114	450	180	1720	0	4.95	0.35	0	42.5	59.84	10.45
115	450	180	1720	0	4.95	0.4	0	42.5	59.81	10.35
116	450	180	1720	0	4.95	0.45	0	42.5	59.85	10.20
117	1103.2	496.44	1654.8	0	1.43	0	0	42.5	47.14	10.24
118	1103.2	496.44	1654.8	0	1.43	0.05	0	42.5	47.58	9.94
119	1103.2	496.44	1654.8	0	1.43	0.1	0	42.5	47.80	9.72
120	1103.2	496.44	1654.8	0	1.43	0.15	0	42.5	47.98	9.47
121	1103.2	496.44	1654.8	0	1.43	0.2	0	42.5	48.09	9.26
122	1103.2	496.44	1654.8	0	1.43	0.25	0	42.5	48.12	9.11
123	1103.2	496.44	1654.8	0	1.43	0.35	0	42.5	48.12	8.96
124	1103.2	496.44	1654.8	0	1.43	0.4	0	42.5	47.78	8.84
125	1103.2	496.44	1654.8	0	1.43	0.45	0	42.5	48.04	8.93
126	1103.2	496.44	1654.8	0	1.43	0.5	0	42.5	47.88	9.82
127	380	193.8	999.4	775.2	0	0.025	0	42.5	41.42	10.18
128	380	193.8	999.4	775.2	0	0.5	0	42.5	41.50	10.10
129	380	193.8	999.4	775.2	0	0.1	0	42.5	41.65	9.97
130	380	193.8	999.4	775.2	0	0	0.5	42.5	41.36	10.19
131	380	193.8	999.4	775.2	0	0	0.1	42.5	41.41	10.13

Table B3.8 Group II C+F dataset for testing (20% of the initial set)

	Cement [kg/m3]	Water [kg/m3]	Fine aggregate [kg/m3]	Coarse aggregate [kg/m3]	Superplasticizer [kg/m3]	Nanofiller [wt%]		Cement class	Compressive strength [MPa]	Flexural strength [MPa]
						CNT	CNF			
#	min/max	min/max	min/max	min/max	min/max	min/max	min/max	0/1	min/max	min/max
1	1361.09	680.55	0	0	0	0.05	0	52.5	51.81	12.67
2	1356.01	678.01	0	0	0	0.15	0	52.5	52.19	11.69
3	1500	495	0	0	0	0.02	0	42.5	77.14	5.96
4	1500	495	0	0	0	0.06	0	42.5	77.73	5.70
5	1200	600	0	0	0	0	0	42.5	32.10	10.95
6	1200	600	0	0	0	0.06	0	42.5	32.63	10.27
7	1200	600	0	0	0	0.09	0	42.5	32.69	10.02
8	1500	600	0	0	0	0.04	0	42.5	41.55	10.28
9	1500	600	0	0	0	0.08	0	42.5	41.83	9.89
10	1578.95	789.475	0	0	0	0.05	0	42.5	60.84	14.63
11	1578.95	789.475	0	0	0	0.25	0	42.5	61.25	13.86
12	542	262.87	1490.5	0	0	0.08	0	42.5	28.87	8.74
13	542	262.87	1490.5	0	0	0.4	0	42.5	29.17	7.96
14	508.19	254.10	1524.58	0	0	0.025	0	42.5	46.41	12.57
15	495.49	272.52	1486.47	0	0	0.025	0	42.5	44.18	11.50
16	512.1	256.05	1536.3	0	2.05	0	0	42.5	28.68	9.03
17	512.1	256.05	1536.3	0	2.05	0.1	0	42.5	28.99	8.70
18	353.72	176.86	1061.15	0	0.41	0	0.1	52.5	48.85	15.56
19	348.32	174.16	1044.96	0	2.02	0	0.5	52.5	49.04	14.56
20	337.77	168.89	1013.3	0	3.05	0	0.8	52.5	48.86	13.72
21	332.61	166.31	997.83	0	4.46	0	1.15	52.5	48.18	15.54
22	327.54	163.77	982.6	0	5.07	0	1.3	52.5	48.70	15.38
23	317.62	158.81	952.84	0	5.94	0	1.8	52.5	47.99	19.35
24	644.66	225.63	1933.98	0	7.74	0.1	0	42.5	65.75	15.17
25	525.56	236.50	709.51	0	0.79	0	0	42.5	50.86	13.62
26	509.64	229.34	688.01	0	0.76	0.1	0	42.5	51.42	13.12
27	450	180	1720	0	4.95	0.2	0	42.5	59.56	10.78
28	450	180	1720	0	4.95	0.5	0	42.5	59.80	10.16
29	1103.2	496.44	1654.8	0	1.43	0.3	0	42.5	48.14	9.01
30	380	193.8	999.4	775.2	0	0	0	42.5	41.30	10.26
31	380	193.8	999.4	775.2	0	0.075	0	42.5	41.59	10.03
32	380	193.8	999.4	775.2	0	0	0.025	42.5	41.32	10.22
33	380	193.8	999.4	775.2	0	0	0.075	42.5	41.37	10.16

B4. Scripts

Script for model COMP from Group I

```
data = readmatrix('Comp_trainingset');
x = data(:,1:20);
y = data(:,21);
xt = x';
yt = y';
hiddenlayerSize = 20;
net0 = feedforwardnet(hiddenlayerSize);
net0.divideParam.trainRatio = 85/100;
net0.divideParam.testRatio = 0/100;
net0.divideParam.valRatio = 15/100;
[net0,tr0] = train(net0,xt,yt);
%% Results of the initial model
ytrain0 = net0(xt(:,tr0.trainInd));
ytraintarget0 = yt(tr0.trainInd);
rmse_train = sqrt(mean(ytrain0-ytraintarget0).^2);
yval0 = net0(xt(:,tr0.valInd));
yvaltarget0 = yt(tr0.valInd);
rmse_val = sqrt(mean(yval0-yvaltarget0).^2);
plot(ytraintarget0,ytrain0,'o');hold on;
plot(yvaltarget0,yval0,'x');hold on;
plot(0:1,0:1);hold off;
mse_tr = mean((ytrain0-ytraintarget0).^2);
mse_val = mean((yval0-yvaltarget0).^2);
%% Optimization of the network architecture
for i=1:60
    hiddenLayerSize = i;
    net = feedforwardnet(hiddenLayerSize);
    net.divideParam.trainRatio = 85/100;
    net.divideParam.testRatio = 0/100;
    net.divideParam.valRatio = 15/100;
    [net,tr] = train(net,xt,yt);
    ytrain = net(xt(:,tr.trainInd));
    ytraintarget = yt(tr.trainInd);
```

```
    rmse_train(i) = sqrt(mean(ytrain-ytraintarget).^2);
    yval = net(xt(:,tr.valInd));
    yvaltarget = yt(tr.valInd);
    rmse_val(i) = sqrt(mean(yval-yvaltarget).^2);
    mse_tr(i) = mean((ytrain-ytraintarget).^2);
    mse_val(i) = mean((yval-yvaltarget).^2);
end
%% Optimization plot
trainrmse = plot(1:60,rmse_train); hold on;
valrmse = plot(1:60,rmse_val); hold off;
%% Training the optimized network
hiddenlayerSize1 = 31;
net1 = feedforwardnet(hiddenlayerSize1);
net1.divideParam.trainRatio = 85/100;
net1.divideParam.testRatio = 0/100;
net1.divideParam.valRatio = 15/100;
[net1,tr1] = train(net1,xt,yt);
%% Results of the optimized model
ytrain1 = net1(xt(:,tr1.trainInd));
ytraintarget1 = yt(tr1.trainInd);
rmse_train1 = sqrt(mean(ytrain1-ytraintarget1).^2);
yval1 = net1(xt(:,tr1.valInd));
yvaltarget1 = yt(tr1.valInd);
rmse_val1 = sqrt(mean(yval1-yvaltarget1).^2);
mse_tr1 = mean((ytrain1-ytraintarget1).^2);
mse_val1 = mean((yval1-yvaltarget1).^2);
%% Visualization for optimized model
plot(ytraintarget1,ytrain1,'o'); hold on;
plot(yvaltarget1,yval1,'x'); hold on;
plot(0:1,0:1); hold off;
 %% Training the optimized network#2
hiddenlayerSize2 = 25;
net2 = feedforwardnet(hiddenlayerSize2);
net2.divideParam.trainRatio = 85/100;
net2.divideParam.testRatio = 0/100;
net2.divideParam.valRatio = 15/100;
```

```
[net2,tr2] = train(net2,xt,yt);
%% Results of the optimized model
ytrain2 = net2(xt(:,tr2.trainInd));
ytraintarget2 = yt(tr2.trainInd);
rmse_tr2 = sqrt(mean(ytrain2-ytraintarget2).^2);
yval2 = net2(xt(:,tr2.valInd));
yvaltarget2 = yt(tr2.valInd);
rmse_val2 = sqrt(mean(yval2-yvaltarget2).^2);
mse_tr2 = mean((ytrain2-ytraintarget2).^2);
mse_val2 = mean((yval2-yvaltarget2).^2);
%% Visualization for optimized model
plot(ytraintarget2,ytrain2,'o'); hold on;
plot(yvaltarget2,yval2,'x'); hold on;
plot(0:1,0:1); hold off;
%% Testing the trained network
data1 = readmatrix('Comp_testingset');
x1 = data1(:,1:20);
y1 = data1(:,21);
xt1 = x1';
yt1 = y1';
ytest = sim(net1,xt1);
%% Results of testing vs training
plot(ytraintarget1,ytrain1,'x');hold on;
plot(yt1,ytest,'o');hold on;
plot(0:1,0:1);hold off;
%% Visualization for testing
plot(yt1,ytest,'o'); hold on;
plot(0:1,0:1); hold off;
%% Training on final model
data = readmatrix('Comp_fullset');
x2 = data(:,1:20);
y2 = data(:,21);
xt2 = x2';
yt2 = y2';
net3 = feedforwardnet(hiddenlayerSize1);
net3.divideParam.trainRatio = 100/100;
```

```
net3.divideParam.testRatio = 0/100;
net3.divideParam.valRatio = 0/100;
[net3,tr3] = train(net3,xt2,yt2);
%% Results of the final model
ytrain3 = net3(xt2(:,tr3.trainInd));
ytraintarget3 = yt2(tr3.trainInd);
rmse_train3 = sqrt(mean(ytrain2-ytraintarget2).^2);
mse_tr3 = mean((ytrain3-ytraintarget3).^2);
%% Visualization for final model
plot(ytraintarget3,ytrain3,'o'); hold on;
plot(ytesttarget3,ytest3,'*'); hold on;
plot(yvaltarget3,yval3,'x'); hold on;
plot(0:1,0:1); hold off;
%% Sensitivity analysis weight method
w1 = net3.IW{1} %the input-to-hidden layer weights
w2 = net3.LW{2} %the hidden-to-output layer weights
b1 = net3.b{1} %the input-to-hidden layer bias
b2 = net3.b{2}  %the hidden-to-output layer bias
```

Script for model FLEX from Group I

```
data = readmatrix('Flex_trainingset');
x = data(:,1:16);
y = data(:,17);
xt = x';
yt = y';
hiddenlayerSize = 16;
net0 = feedforwardnet(hiddenlayerSize);
net0.divideParam.trainRatio = 85/100;
net0.divideParam.testRatio = 0/100;
net0.divideParam.valRatio = 15/100;
[net0,tr0] = train(net0,xt,yt);
%% Results of the initial model
ytrain0 = net0(xt(:,tr0.trainInd));
ytraintarget0 = yt(tr0.trainInd);
rmse_train0 = sqrt(mean(ytrain0-ytraintarget0).^2);
yval0 = net0(xt(:,tr0.valInd));
```

```
yvaltarget0 = yt(tr0.valInd);
rmse_val0 = sqrt(mean(yval0-yvaltarget0).^2);
plot(ytraintarget0,ytrain0,'o');hold on;
plot(yvaltarget0,yval0,'x');hold on;
plot(0:1,0:1);hold off;
mse_tr0 = mean((ytrain0-ytraintarget0).^2);
mse_val0 = mean((yval0-yvaltarget0).^2);
%% Optimization of the network architecture
for i=1:54
    hiddenLayerSize = i;
    net = feedforwardnet(hiddenLayerSize);
    net.divideParam.trainRatio = 85/100;
    net.divideParam.testRatio = 0/100;
    net.divideParam.valRatio = 15/100;
    [net,tr] = train(net,xt,yt);
    ytrain = net(xt(:,tr.trainInd));
    ytraintarget = yt(tr.trainInd);
    rmse_train(i) = sqrt(mean(ytrain-ytraintarget).^2);
    yval = net(xt(:,tr.valInd));
    yvaltarget = yt(tr.valInd);
    rmse_val(i) = sqrt(mean(yval-yvaltarget).^2);
    mse_tr(i) = mean((ytrain-ytraintarget).^2);
    mse_val(i) = mean((yval-yvaltarget).^2);
end
%% Optimization plot
trainrmse = plot(1:54,rmse_train); hold on;
valrmse = plot(1:54,rmse_val); hold off;
%% Training the optimized network
hiddenlayerSize1 = 21;
net1 = feedforwardnet(hiddenlayerSize1);
net1.divideParam.trainRatio = 85/100;
net1.divideParam.testRatio = 0/100;
net1.divideParam.valRatio = 15/100;
[net1,tr1] = train(net1,xt,yt);
%% Results of the optimized model
ytrain1 = net1(xt(:,tr1.trainInd));
```

```
ytraintarget1 = yt(tr1.trainInd);
rmse_train1 = sqrt(mean(ytrain1-ytraintarget1).^2);
yval1 = net1(xt(:,tr1.valInd));
yvaltarget1 = yt(tr1.valInd);
rmse_val1 = sqrt(mean(yval1-yvaltarget1).^2);
mse_tr1 = mean((ytrain1-ytraintarget1).^2);
mse_val1 = mean((yval1-yvaltarget1).^2);
%% Visualization for optimized model
plot(ytraintarget1,ytrain1,'o'); hold on;
plot(yvaltarget1,yval1,'x'); hold on;
plot(0:1,0:1); hold off;
%% %% Training the optimized network#2
hiddenlayerSize2 = 30;
net2 = feedforwardnet(hiddenlayerSize2);
net2.divideParam.trainRatio = 85/100;
net2.divideParam.testRatio = 0/100;
net2.divideParam.valRatio = 15/100;
[net2,tr2] = train(net2,xt,yt);
%% Results of the optimized model
ytrain2 = net2(xt(:,tr2.trainInd));
ytraintarget2 = yt(tr2.trainInd);
rmse_tr2 = sqrt(mean(ytrain2-ytraintarget2).^2);
yval2 = net2(xt(:,tr2.valInd));
yvaltarget2 = yt(tr2.valInd);
rmse_val2 = sqrt(mean(yval2-yvaltarget2).^2);
mse_tr2 = mean((ytrain2-ytraintarget2).^2);
mse_val2 = mean((yval2-yvaltarget2).^2);
%% Visualization for optimized model
plot(ytraintarget2,ytrain2,'o'); hold on;
plot(yvaltarget2,yval2,'x'); hold on;
plot(0:1,0:1); hold off;
%% Testing the trained network
data1 = readmatrix('Flex_testingset');
x1 = data1(:,1:16);
y1 = data1(:,17);
xt1 = x1';
```

```
yt1 = y1';
ytest = sim(net2,xt1);
%% Results of testing vs training
plot(ytraintarget2,ytrain2,'x');hold on;
plot(yt1,ytest,'o');hold on;
plot(0:1,0:1);hold off;
%% Visualization for testing
plot(yt1,ytest,'o'); hold on;
plot(0:1,0:1); hold off;
%% Training on final model
data = readmatrix('Flex_fullset');
x2 = data(:,1:16);
y2 = data(:,17);
xt2 = x2';
yt2 = y2';
net3 = feedforwardnet(hiddenlayerSize2);
net3.divideParam.trainRatio = 100/100;
net3.divideParam.testRatio = 0/100;
net3.divideParam.valRatio = 0/100;
[net3,tr3] = train(net3,xt2,yt2);
%% Results of the final model
ytrain3 = net3(xt2(:,tr3.trainInd));
ytraintarget3 = yt2(tr3.trainInd);
rmse_train3 = sqrt(mean(ytrain2-ytraintarget2).^2);
mse_tr3 = mean((ytrain3-ytraintarget3).^2);
%% Visualization for final model
plot(ytraintarget3,ytrain3,'o'); hold on;
plot(ytesttarget3,ytest3,'*'); hold on;
plot(yvaltarget3,yval3,'x'); hold on;
plot(0:1,0:1); hold off;
%% Sensitivity analysis weight method
w1 = net3.IW{1} %the input-to-hidden layer weights
w2 = net3.LW{2} %the hidden-to-output layer weights
b1 = net3.b{1} %the input-to-hidden layer bias
b2 = net3.b{2}  %the hidden-to-output layer bias
```

Script for model COMP+FLEX from Group I

```
data = readmatrix('C+F_trainingset');
x = data(:,1:11);
y = data(:,12:13);
y01 = data(:,12);
y02 = data(:,13);
xt = x';
yt = y';
yt01 = y01';
yt02 = y02';
hiddenlayerSize = 11;
net0 = feedforwardnet(hiddenlayerSize);
net0.divideParam.trainRatio = 85/100;
net0.divideParam.testRatio = 0/100;
net0.divideParam.valRatio = 15/100;
[net0,tr0] = train(net0,xt,yt);
%% Results of the initial model
ytrain0 = net0(xt(:,tr0.trainInd));
ytraintarget0 = yt(tr0.trainInd);
perf_tr0 = mse(ytrain0-ytraintarget0);
yval0 = net0(xt(:,tr0.valInd));
yvaltarget0 = yt(tr0.valInd);
perf_val0 = mse(yval0-yvaltarget0);
mae_tr0 = mae(ytrain0-ytraintarget0);
mae_val0 = mae(yval0-yvaltarget0);
%% Optimization of the network architecture
for i=1:33
    hiddenLayerSize = i;
    net = feedforwardnet(hiddenLayerSize);
    net.divideParam.trainRatio = 85/100;
    net.divideParam.testRatio = 0/100;
    net.divideParam.valRatio = 15/100;
    [net,tr] = train(net,xt,yt);
    ytrain = net(xt(:,tr.trainInd));
    ytraintarget = yt(tr.trainInd);
    rmse_train(i) = sqrt(mse(ytrain-ytraintarget));
```

```
    yval = net(xt(:,tr.valInd));
    yvaltarget = yt(tr.valInd);
    rmse_val(i) = sqrt(mse(yval-yvaltarget));
end
%% Optimization plot
trainmse01 = plot(1:33,rmse_train); hold on;
trainmse02 = plot(1:33,rmse_val); hold off;
%% Training the optimized network
hiddenlayerSize1 = 18;
net1 = feedforwardnet(hiddenlayerSize1);
net1.divideParam.trainRatio = 85/100;
net1.divideParam.testRatio = 0/100;
net1.divideParam.valRatio = 15/100;
[net1,tr1] = train(net1,xt,yt);
%% Results of the optimized model
ytrain1 = net1(xt(:,tr1.trainInd));
ytraintarget1 = yt(tr1.trainInd);
rmse_train1 = sqrt(mean(ytrain1-ytraintarget1).^2);
yval1 = net1(xt(:,tr1.valInd));
yvaltarget1 = yt(tr1.valInd);
rmse_val1 = sqrt(mean(yval1-yvaltarget1).^2);
mse_tr1 = mean((ytrain1-ytraintarget1).^2);
mse_val1 = mean((yval1-yvaltarget1).^2);
% %% Training the optimized network#2
hiddenlayerSize2 = 24;
net2 = feedforwardnet(hiddenlayerSize2);
net2.divideParam.trainRatio = 85/100;
net2.divideParam.testRatio = 0/100;
net2.divideParam.valRatio = 15/100;
[net2,tr2] = train(net2,xt,yt);
%% Results of the optimized model
ytrain2 = net2(xt(:,tr2.trainInd));
ytraintarget2 = yt(tr2.trainInd);
rmse_tr2 = sqrt(mse(ytrain2-ytraintarget2));
yval2 = net2(xt(:,tr2.valInd));
yvaltarget2 = yt(tr2.valInd);
```

```
rmse_val2 = sqrt(mse(yval2-yvaltarget2));
mse_tr2 = mse(ytrain2-ytraintarget2);
mse_val2 = mse(yval2-yvaltarget2);
%% Testing the trained network
data1 = readmatrix('C+F_testingset');
x1 = data1(:,1:11);
y1 = data1(:,12:13);
xt1 = x1';
yt1 = y1';
ytest = sim(net2,xt1);
%% Results of testing vs training
plot(ytraintarget2,ytrain2,'x');hold on;
plot(yt1,ytest,'o');hold on;
plot(0:1,0:1);hold off;
%% Visualization for testing
plot(yt1,ytest,'o'); hold on;
plot(0:1,0:1); hold off;
%% Training on final model
data = readmatrix('C+F_fullset');
x2 = data(:,1:11);
y2 = data(:,12:13);
xt2 = x2';
yt2 = y2';
net3 = feedforwardnet(hiddenlayerSize2);
net3.divideParam.trainRatio = 100/100;
net3.divideParam.testRatio = 0/100;
net3.divideParam.valRatio = 0/100;
[net3,tr3] = train(net3,xt2,yt2);
%% Results of the final model
ytrain3 = net3(xt2(:,tr3.trainInd));
ytraintarget3 = yt2(tr3.trainInd);
rmse_train3 = sqrt(mse(ytrain2-ytraintarget2));
mse_tr3 = mse(ytrain3-ytraintarget3);
%% Visualization for final model
plot(ytraintarget3,ytrain3,'o'); hold on;
plot(ytesttarget3,ytest3,'*'); hold on;
```

```
plot(yvaltarget3,yval3,'x'); hold on;
plot(0:1,0:1); hold off;
%% Sensitivity analysis weight method
w1 = net3.IW{1} %the input-to-hidden layer weights
w2 = net3.LW{2} %the hidden-to-output layer weights
b1 = net3.b{1} %the input-to-hidden layer bias
b2 = net3.b{2}  %the hidden-to-output layer bias
```

Script for model RESIST from Group I

```
data = readmatrix('Resist_trainingset');
x = data(:,1:17);
y = data(:,18);
xt = x';
yt = y';
hiddenlayerSize = 17;
net0 = feedforwardnet(hiddenlayerSize);
net0.divideParam.trainRatio = 85/100;
net0.divideParam.testRatio = 0/100;
net0.divideParam.valRatio = 15/100;
[net0,tr0] = train(net0,xt,yt);
%% Results of the initial model
ytrain0 = net0(xt(:,tr0.trainInd));
ytraintarget0 = yt(tr0.trainInd);
rmse_train0 = sqrt(mean(ytrain0-ytraintarget0).^2);
yval0 = net0(xt(:,tr0.valInd));
yvaltarget0 = yt(tr0.valInd);
rmse_val0 = sqrt(mean(yval0-yvaltarget0).^2);
plot(ytraintarget0,ytrain0,'o');hold on;
plot(yvaltarget0,yval0,'x');hold on;
plot(0:1,0:1);hold off;
mse_tr0 = mean((ytrain0-ytraintarget0).^2);
mse_val0 = mean((yval0-yvaltarget0).^2);
rmse_tr0 = sqrt(mean(ytrain0-ytraintarget0).^2);
rmse_val0 = sqrt(mean(yval0-yvaltarget0).^2);
%% Optimization of the network architecture
for i=1:58
```

```
    hiddenLayerSize = i;
    net = feedforwardnet(hiddenLayerSize);
    net.divideParam.trainRatio = 85/100;
    net.divideParam.testRatio = 0/100;
    net.divideParam.valRatio = 15/100;
    [net,tr] = train(net,xt,yt);
    ytrain = net(xt(:,tr.trainInd));
    ytraintarget = yt(tr.trainInd);
    rmse_train(i) = sqrt(mean(ytrain-ytraintarget).^2);
    yval = net(xt(:,tr.valInd));
    yvaltarget = yt(tr.valInd);
    rmse_val(i) = sqrt(mean(yval-yvaltarget).^2);
    mse_tr(i) = mean((ytrain-ytraintarget).^2);
    mse_val(i) = mean((yval-yvaltarget).^2);
end
%% Optimization plot
trainrmse = plot(1:58,rmse_train); hold on;
valrmse = plot(1:58,rmse_val); hold off;
%% Training the optimized network
hiddenlayerSize1 = 23;
net1 = feedforwardnet(hiddenlayerSize1);
net1.divideParam.trainRatio = 85/100;
net1.divideParam.testRatio = 0/100;
net1.divideParam.valRatio = 15/100;
[net1,tr1] = train(net1,xt,yt);
%% Results of the optimized model
ytrain1 = net1(xt(:,tr1.trainInd));
ytraintarget1 = yt(tr1.trainInd);
rmse_train1 = sqrt(mean(ytrain1-ytraintarget1).^2);
yval1 = net1(xt(:,tr1.valInd));
yvaltarget1 = yt(tr1.valInd);
rmse_val1 = sqrt(mean(yval1-yvaltarget1).^2);
mse_tr1 = mean((ytrain1-ytraintarget1).^2);
mse_val1 = mean((yval1-yvaltarget1).^2);
%% Visualization for optimized model
plot(ytraintarget1,ytrain1,'o'); hold on;
```

```
plot(yvaltarget1,yval1,'x'); hold on;
plot(0:1,0:1); hold off;
%% %% Training the optimized network#2
hiddenlayerSize2 = 31;
net2 = feedforwardnet(hiddenlayerSize2);
net2.divideParam.trainRatio = 85/100;
net2.divideParam.testRatio = 0/100;
net2.divideParam.valRatio = 15/100;
[net2,tr2] = train(net2,xt,yt);
%% Results of the optimized model
ytrain2 = net2(xt(:,tr2.trainInd));
ytraintarget2 = yt(tr2.trainInd);
rmse_tr2 = sqrt(mean(ytrain2-ytraintarget2).^2);
yval2 = net2(xt(:,tr2.valInd));
yvaltarget2 = yt(tr2.valInd);
rmse_val2 = sqrt(mean(yval2-yvaltarget2).^2);
mse_tr2 = mean((ytrain2-ytraintarget2).^2);
mse_val2 = mean((yval2-yvaltarget2).^2);
%% Visualization for optimized model
plot(ytraintarget2,ytrain2,'o'); hold on;
plot(yvaltarget2,yval2,'x'); hold on;
plot(0:1,0:1); hold off;
%% Testing the trained network
data1 = readmatrix('Resist_testingset');
x1 = data1(:,1:17);
y1 = data1(:,18);
xt1 = x1';
yt1 = y1';
ytest = sim(net2,xt1);
%% Results of testing vs training
plot(ytraintarget2,ytrain2,'x');hold on;
plot(yt1,ytest,'o');hold on;
plot(0:1,0:1);hold off;
%% Visualization for testing
plot(yt1,ytest,'o'); hold on;
plot(0:1,0:1); hold off;
```

```
%% Training on final model
data = readmatrix('Resist_fullset');
x2 = data(:,1:17);
y2 = data(:,18);
xt2 = x2';
yt2 = y2';
net3 = feedforwardnet(hiddenlayerSize2);
net3.divideParam.trainRatio = 100/100;
net3.divideParam.testRatio = 0/100;
net3.divideParam.valRatio = 0/100;
[net3,tr3] = train(net3,xt2,yt2);
%% Results of the final model
ytrain3 = net3(xt2(:,tr3.trainInd));
ytraintarget3 = yt2(tr3.trainInd);
rmse_train3 = sqrt(mean(ytrain2-ytraintarget2).^2);
mse_tr3 = mean((ytrain3-ytraintarget3).^2);
%% Visualization for final model
plot(ytraintarget3,ytrain3,'o'); hold on;
plot(ytesttarget3,ytest3,'*'); hold on;
plot(yvaltarget3,yval3,'x'); hold on;
plot(0:1,0:1); hold off;
%% Sensitivity analysis weight method
w1 = net3.IW{1} %the input-to-hidden layer weights
w2 = net3.LW{2} %the hidden-to-output layer weights
b1 = net3.b{1} %the input-to-hidden layer bias
b2 = net3.b{2}  %the hidden-to-output layer bias
```

Script for model C+F from Group II

```
data = readmatrix('C&F_trainingset');
x = data(:,1:8);
y = data(:,9:10);
y01 = data(:,9);
y02 = data(:,10);
xt = x';
yt = y';
yt01 = y01';
```

```
yt02 = y02';
hiddenlayerSize = 8;
net0 = feedforwardnet(hiddenlayerSize);
net0.divideParam.trainRatio = 85/100;
net0.divideParam.testRatio = 0/100;
net0.divideParam.valRatio = 15/100;
[net0,tr0] = train(net0,xt,yt);
%% Results of the initial model
ytrain0 = net0(xt(:,tr0.trainInd));
ytraintarget0 = yt(tr0.trainInd);
perf_tr0 = mse(ytrain0-ytraintarget0);
yval0 = net0(xt(:,tr0.valInd));
yvaltarget0 = yt(tr0.valInd);
perf_val0 = mse(yval0-yvaltarget0);
mae_tr0 = mae(ytrain0-ytraintarget0);
mae_val0 = mae(yval0-yvaltarget0);
rmse_tr0 = sqrt(perf_tr0);
rmse_val0 = sqrt(perf_val0);
%% Optimization of the network architecture
for i=1:24
   hiddenLayerSize = i;
   net = feedforwardnet(hiddenLayerSize);
   net.divideParam.trainRatio = 85/100;
   net.divideParam.testRatio = 0/100;
   net.divideParam.valRatio = 15/100;
   [net,tr] = train(net,xt,yt);
   ytrain = net(xt(:,tr.trainInd));
   ytraintarget = yt(tr.trainInd);
   rmse_train(i) = sqrt(mse(ytrain-ytraintarget));
   yval = net(xt(:,tr.valInd));
   yvaltarget = yt(tr.valInd);
   rmse_val(i) = sqrt(mse(yval-yvaltarget));
end
%% Optimization plot
trainmse01 = plot(1:24,rmse_train); hold on;
trainmse02 = plot(1:24,rmse_val); hold off;
```

```
%% Training the optimized network
hiddenlayerSize1 = 13;
net1 = feedforwardnet(hiddenlayerSize1);
net1.divideParam.trainRatio = 85/100;
net1.divideParam.testRatio = 0/100;
net1.divideParam.valRatio = 15/100;
[net1,tr1] = train(net1,xt,yt);
%% Results of the optimized model
ytrain1 = net1(xt(:,tr1.trainInd));
ytraintarget1 = yt(tr1.trainInd);
rmse_train1 = sqrt(mean(ytrain1-ytraintarget1).^2);
yval1 = net1(xt(:,tr1.valInd));
yvaltarget1 = yt(tr1.valInd);
rmse_val1 = sqrt(mean(yval1-yvaltarget1).^2);
mse_tr1 = mean((ytrain1-ytraintarget1).^2);
mse_val1 = mean((yval1-yvaltarget1).^2);
%% Training the optimized network#2
hiddenlayerSize2 = 17;
net2 = feedforwardnet(hiddenlayerSize2);
net2.divideParam.trainRatio = 85/100;
net2.divideParam.testRatio = 0/100;
net2.divideParam.valRatio = 15/100;
[net2,tr2] = train(net2,xt,yt);
%% Results of the optimized model
ytrain2 = net2(xt(:,tr2.trainInd));
ytraintarget2 = yt(tr2.trainInd);
rmse_tr2 = sqrt(mse(ytrain2-ytraintarget2));
yval2 = net2(xt(:,tr2.valInd));
yvaltarget2 = yt(tr2.valInd);
rmse_val2 = sqrt(mse(yval2-yvaltarget2));
mse_tr2 = mse(ytrain2-ytraintarget2);
mse_val2 = mse(yval2-yvaltarget2);
%% Testing the trained network
data1 = readmatrix('C&F_testingset');
x1 = data1(:,1:8);
y1 = data1(:,9:10);
```

```
xt1 = x1';
yt1 = y1';
ytest = sim(net2,xt1);
%% Visualization for testing
plot(yt1,ytest,'o'); hold on;
plot(0:1,0:1); hold off;
%% Training on final model
data = readmatrix('C&F_fullset');
x2 = data(:,1:8);
y2 = data(:,9:10);
xt2 = x2';
yt2 = y2';
net3 = feedforwardnet(hiddenlayerSize2);
net3.divideParam.trainRatio = 100/100;
net3.divideParam.testRatio = 0/100;
net3.divideParam.valRatio = 0/100;
[net3,tr3] = train(net3,xt2,yt2);
%% Results of the final model
ytrain3 = net3(xt2(:,tr3.trainInd));
ytraintarget3 = yt2(tr3.trainInd);
rmse_train3 = sqrt(mse(ytrain2-ytraintarget2));
mse_tr3 = mse(ytrain3-ytraintarget3);
%% Sensitivity analysis weight method
w1 = net3.IW{1} %the input-to-hidden layer weights
w2 = net3.LW{2} %the hidden-to-output layer weights
b1 = net3.b{1} %the input-to-hidden layer bias
b2 = net3.b{2}  %the hidden-to-output layer bias
```

Script for model C+F(C) from Group II

```
data = readmatrix('C&F_trainingset');
x = data(:,1:8);
y = data(:,9);
xt = x';
yt = y';
hiddenlayerSize = 8;
net0 = feedforwardnet(hiddenlayerSize);
```

```
net0.divideParam.trainRatio = 85/100;
net0.divideParam.testRatio = 0/100;
net0.divideParam.valRatio = 15/100;
[net0,tr0] = train(net0,xt,yt);
%% Results of the initial model
ytrain0 = net0(xt(:,tr0.trainInd));
ytraintarget0 = yt(tr0.trainInd);
perf_tr0 = mse(ytrain0-ytraintarget0);
yval0 = net0(xt(:,tr0.valInd));
yvaltarget0 = yt(tr0.valInd);
perf_val0 = mse(yval0-yvaltarget0);
mae_tr0 = mae(ytrain0-ytraintarget0);
mae_val0 = mae(yval0-yvaltarget0);
rmse_tr0 = sqrt(perf_tr0);
rmse_val0 = sqrt(perf_val0);
%% Optimization of the network architecture
for i=1:24
   hiddenLayerSize = i;
   net = feedforwardnet(hiddenLayerSize);
   net.divideParam.trainRatio = 85/100;
   net.divideParam.testRatio = 0/100;
   net.divideParam.valRatio = 15/100;
   [net,tr] = train(net,xt,yt);
   ytrain = net(xt(:,tr.trainInd));
   ytraintarget = yt(tr.trainInd);
   rmse_train(i) = sqrt(mse(ytrain-ytraintarget));
   yval = net(xt(:,tr.valInd));
   yvaltarget = yt(tr.valInd);
   rmse_val(i) = sqrt(mse(yval-yvaltarget));
end
%% Optimization plot
trainmse01 = plot(1:24,rmse_train); hold on;
trainmse02 = plot(1:24,rmse_val); hold off;
%% Training the optimized network
hiddenlayerSize1 = 10;
net1 = feedforwardnet(hiddenlayerSize1);
```

```
net1.divideParam.trainRatio = 85/100;
net1.divideParam.testRatio = 0/100;
net1.divideParam.valRatio = 15/100;
[net1,tr1] = train(net1,xt,yt);
%% Results of the optimized model
ytrain1 = net1(xt(:,tr1.trainInd));
ytraintarget1 = yt(tr1.trainInd);
rmse_train1 = sqrt(mean(ytrain1-ytraintarget1).^2);
yval1 = net1(xt(:,tr1.valInd));
yvaltarget1 = yt(tr1.valInd);
rmse_val1 = sqrt(mean(yval1-yvaltarget1).^2);
mse_tr1 = mean((ytrain1-ytraintarget1).^2);
mse_val1 = mean((yval1-yvaltarget1).^2);
 %% Training the optimized network#2
hiddenlayerSize2 = 13;
net2 = feedforwardnet(hiddenlayerSize2);
net2.divideParam.trainRatio = 85/100;
net2.divideParam.testRatio = 0/100;
net2.divideParam.valRatio = 15/100;
[net2,tr2] = train(net2,xt,yt);
%% Results of the optimized model
ytrain2 = net2(xt(:,tr2.trainInd));
ytraintarget2 = yt(tr2.trainInd);
rmse_tr2 = sqrt(mse(ytrain2-ytraintarget2));
yval2 = net2(xt(:,tr2.valInd));
yvaltarget2 = yt(tr2.valInd);
rmse_val2 = sqrt(mse(yval2-yvaltarget2));
mse_tr2 = mse(ytrain2-ytraintarget2);
mse_val2 = mse(yval2-yvaltarget2);
%% Testing the trained network
data1 = readmatrix('C&F_testingset');
x1 = data1(:,1:8);
y1 = data1(:,9);
xt1 = x1';
yt1 = y1';
ytest = sim(net2,xt1);
```

```
%% Results of testing vs training
plot(ytrain2,ytraintarget2,'x');hold on;
plot(yt1,ytest,'o');hold on;
plot(0:1,0:1);hold off;
%% Visualization for testing
plot(yt1,ytest,'o'); hold on;
plot(0:1,0:1); hold off;
%% Training on final model
data = readmatrix('C&F_fullset');
x2 = data(:,1:8);
y2 = data(:,9);
xt2 = x2';
yt2 = y2';
net3 = feedforwardnet(hiddenlayerSize2);
net3.divideParam.trainRatio = 100/100;
net3.divideParam.testRatio = 0/100;
net3.divideParam.valRatio = 0/100;
[net3,tr3] = train(net3,xt2,yt2);
%% Results of the final model
ytrain3 = net3(xt2(:,tr3.trainInd));
ytraintarget3 = yt2(tr3.trainInd);
rmse_train3 = sqrt(mse(ytrain2-ytraintarget2));
mse_tr3 = mse(ytrain3-ytraintarget3);
%% Visualization for final model
plot(ytraintarget3,ytrain3,'o'); hold on;
plot(0:1,0:1); hold off;
%% Sensitivity analysis weight method
w1 = net3.IW{1} %the input-to-hidden layer weights
w2 = net3.LW{2} %the hidden-to-output layer weights
b1 = net3.b{1} %the input-to-hidden layer bias
b2 = net3.b{2}  %the hidden-to-output layer bias
```

Script for model C+F(F) from Group II

```
data = readmatrix('C&F_trainingset');
x = data(:,1:8);
y = data(:,10);
```

```
xt = x';
yt = y';
hiddenlayerSize = 8;
net0 = feedforwardnet(hiddenlayerSize);
net0.divideParam.trainRatio = 85/100;
net0.divideParam.testRatio = 0/100;
net0.divideParam.valRatio = 15/100;
[net0,tr0] = train(net0,xt,yt);
%% Results of the initial model
ytrain0 = net0(xt(:,tr0.trainInd));
ytraintarget0 = yt(tr0.trainInd);
perf_tr0 = mse(ytrain0-ytraintarget0);
yval0 = net0(xt(:,tr0.valInd));
yvaltarget0 = yt(tr0.valInd);
perf_val0 = mse(yval0-yvaltarget0);
mae_tr0 = mae(ytrain0-ytraintarget0);
mae_val0 = mae(yval0-yvaltarget0);
rmse_tr0 = sqrt(perf_tr0);
rmse_val0 = sqrt(perf_val0);
%% Optimization of the network architecture
for i=1:24
   hiddenLayerSize = i;
   net = feedforwardnet(hiddenLayerSize);
   net.divideParam.trainRatio = 85/100;
   net.divideParam.testRatio = 0/100;
   net.divideParam.valRatio = 15/100;
   [net,tr] = train(net,xt,yt);
   ytrain = net(xt(:,tr.trainInd));
   ytraintarget = yt(tr.trainInd);
   rmse_train(i) = sqrt(mse(ytrain-ytraintarget));
   yval = net(xt(:,tr.valInd));
   yvaltarget = yt(tr.valInd);
   rmse_val(i) = sqrt(mse(yval-yvaltarget));
end
%% Optimization plot
trainmse01 = plot(1:24,rmse_train); hold on;
```

```
trainmse02 = plot(1:24,rmse_val); hold off;
%% Training the optimized network
hiddenlayerSize1 = 10;
net1 = feedforwardnet(hiddenlayerSize1);
net1.divideParam.trainRatio = 85/100;
net1.divideParam.testRatio = 0/100;
net1.divideParam.valRatio = 15/100;
[net1,tr1] = train(net1,xt,yt);
%% Results of the optimized model
ytrain1 = net1(xt(:,tr1.trainInd));
ytraintarget1 = yt(tr1.trainInd);
rmse_train1 = sqrt(mean(ytrain1-ytraintarget1).^2);
yval1 = net1(xt(:,tr1.valInd));
yvaltarget1 = yt(tr1.valInd);
rmse_val1 = sqrt(mean(yval1-yvaltarget1).^2);
mse_tr1 = mean((ytrain1-ytraintarget1).^2);
mse_val1 = mean((yval1-yvaltarget1).^2);
%% Training the optimized network#2
hiddenlayerSize2 = 13;
net2 = feedforwardnet(hiddenlayerSize2);
net2.divideParam.trainRatio = 85/100;
net2.divideParam.testRatio = 0/100;
net2.divideParam.valRatio = 15/100;
[net2,tr2] = train(net2,xt,yt);
%% Results of the optimized model
ytrain2 = net2(xt(:,tr2.trainInd));
ytraintarget2 = yt(tr2.trainInd);
rmse_tr2 = sqrt(mse(ytrain2-ytraintarget2));
yval2 = net2(xt(:,tr2.valInd));
yvaltarget2 = yt(tr2.valInd);
rmse_val2 = sqrt(mse(yval2-yvaltarget2));
mse_tr2 = mse(ytrain2-ytraintarget2);
mse_val2 = mse(yval2-yvaltarget2);
%% Testing the trained network
data1 = readmatrix('C&F_testingset');
x1 = data1(:,1:8);
```

```
y1 = data1(:,10);
xt1 = x1';
yt1 = y1';
ytest = sim(net1,xt1);
%% Results of testing vs training
plot(ytrain1,ytraintarget1,'x');hold on;
plot(yt1,ytest,'o');hold on;
plot(0:1,0:1);hold off;
%% Visualization for testing
plot(yt1,ytest,'o'); hold on;
plot(0:1,0:1); hold off;
%% Training on final model
data = readmatrix('C&F_fullset');
x2 = data(:,1:8);
y2 = data(:,10);
xt2 = x2';
yt2 = y2';
net3 = feedforwardnet(hiddenlayerSize1);
net3.divideParam.trainRatio = 100/100;
net3.divideParam.testRatio = 0/100;
net3.divideParam.valRatio = 0/100;
[net3,tr3] = train(net3,xt2,yt2);
%% Results of the final model
ytrain3 = net3(xt2(:,tr3.trainInd));
ytraintarget3 = yt2(tr3.trainInd);
rmse_train3 = sqrt(mse(ytrain2-ytraintarget2));
mse_tr3 = mse(ytrain3-ytraintarget3);
%% Sensitivity analysis weight method
w1 = net3.IW{1} %the input-to-hidden layer weights
w2 = net3.LW{2} %the hidden-to-output layer weights
b1 = net3.b{1} %the input-to-hidden layer bias
b2 = net3.b{2}  %the hidden-to-output layer bias
```

B5. Results for prescribed models – Group I

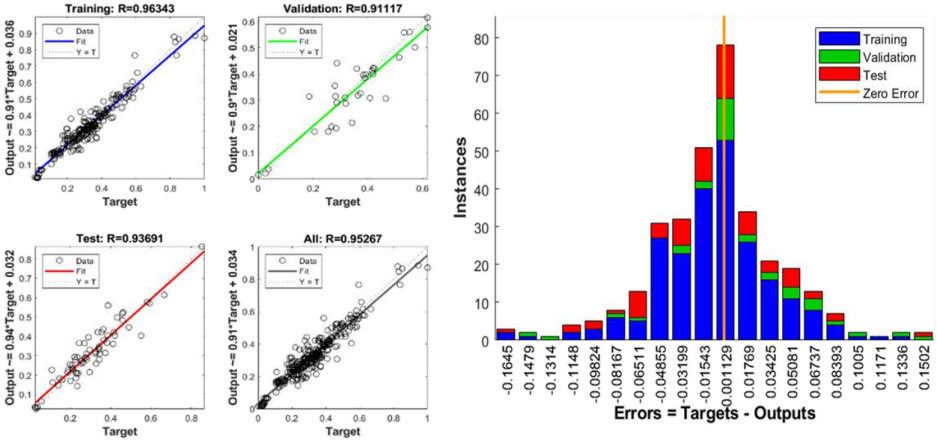

Figure B5.1 Regression coefficient and error histogram for model COMP_70_10_20-20

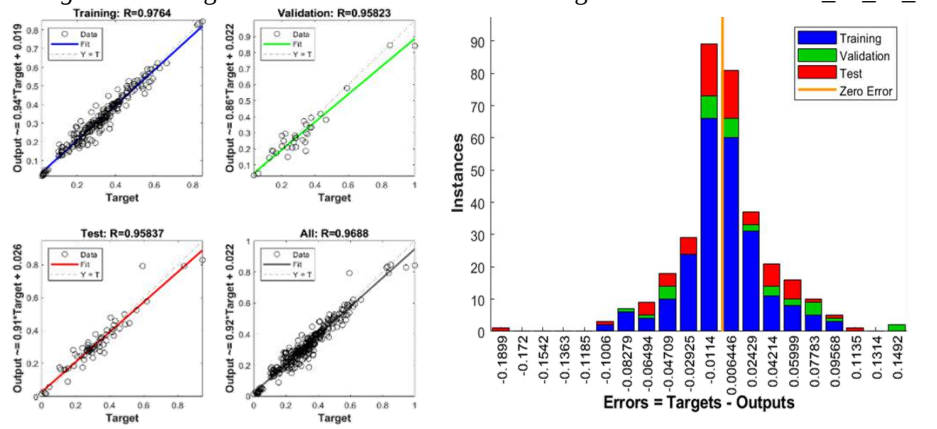

Figure B5.2. Regression coefficient and error histogram for model COMP_70_10_20-41

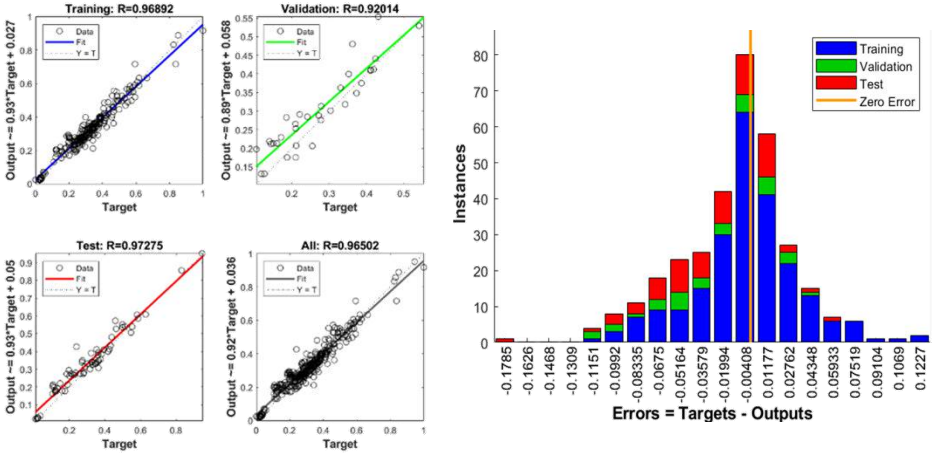

Figure B5.3. Regression coefficient and error histogram for model COMP_70_10_20-60

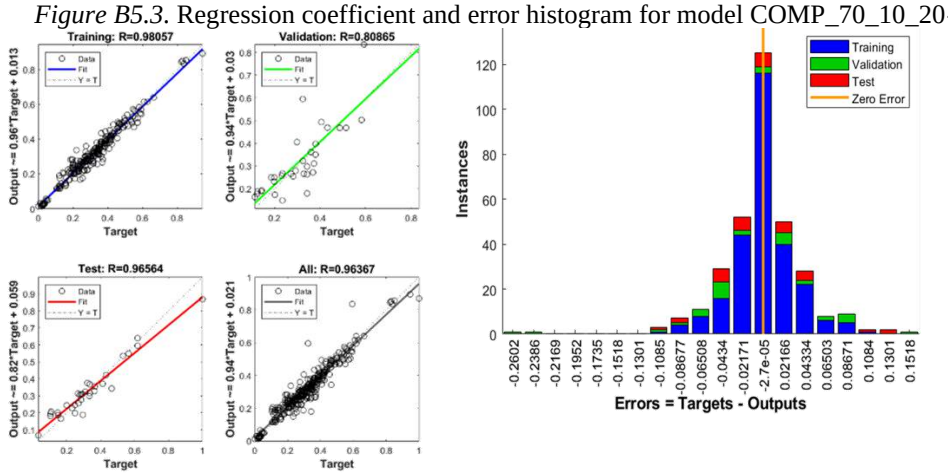

Figure B5.4 Regression coefficient and error histogram for model COMP_80_10_10-20

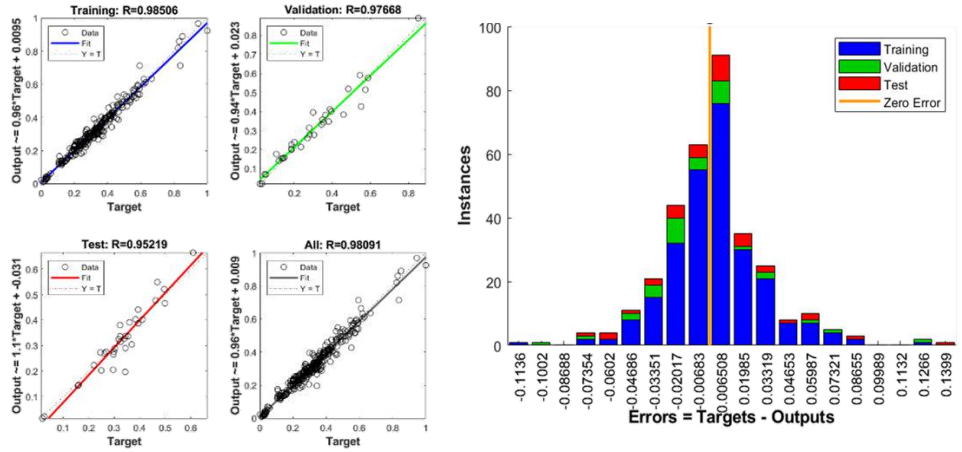

Figure B5.5 Regression coefficient and error histogram for model COMP_80_10_10-41

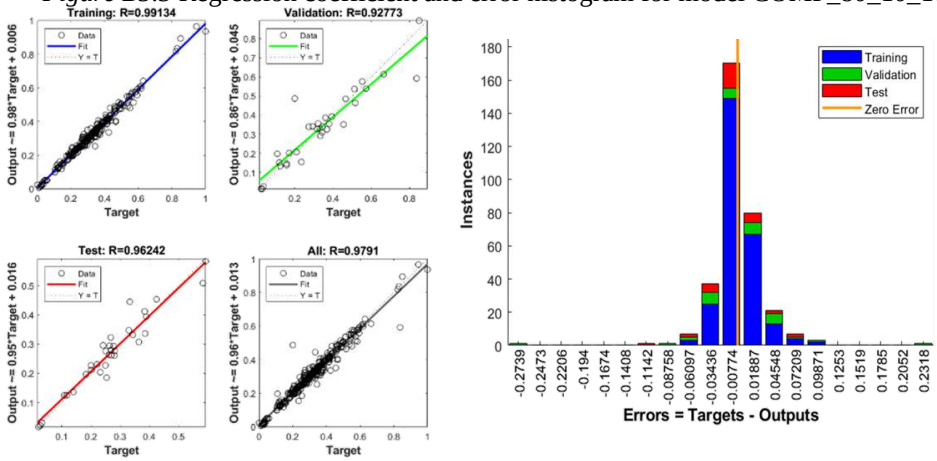

Figure B5.6 Regression coefficient and error histogram for model COMP_80_10_10-60

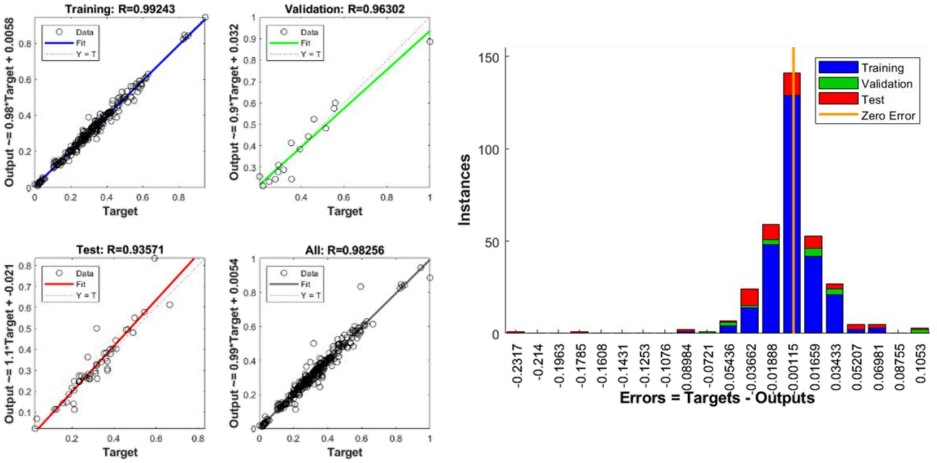

Figure B5.7 Regression coefficient and error histogram for model COMP_80_5_15-20

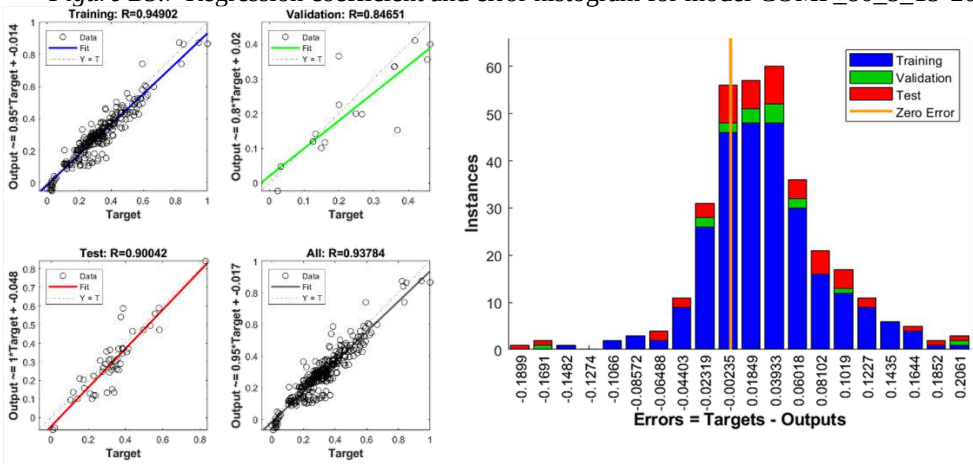

Figure B5.8 Regression coefficient and error histogram for model COMP_80_5_15-41

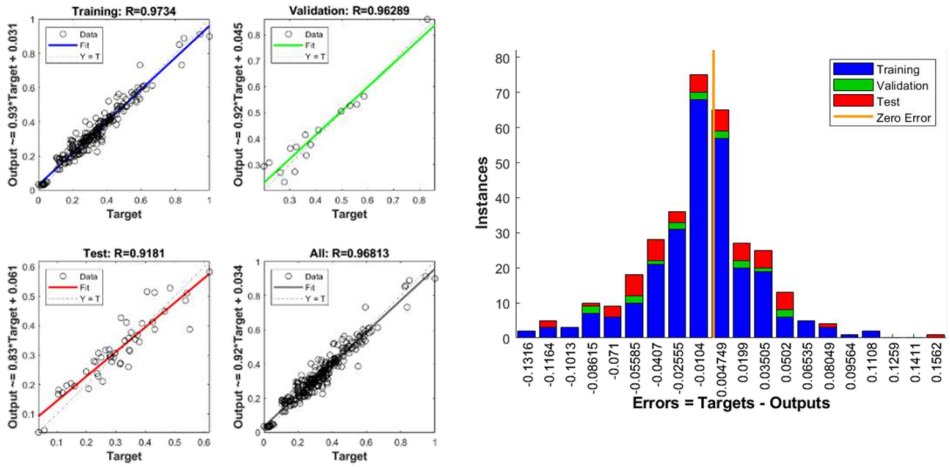

Figure B5.9 Regression coefficient and error histogram for model COMP_80_5_15-60

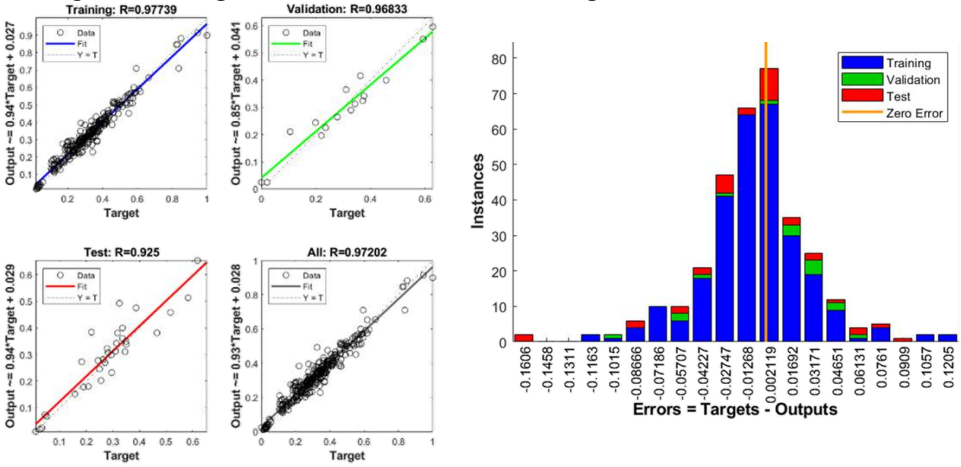

Figure B5.10 Regression coefficient and error histogram for model COMP_85_5_10-20

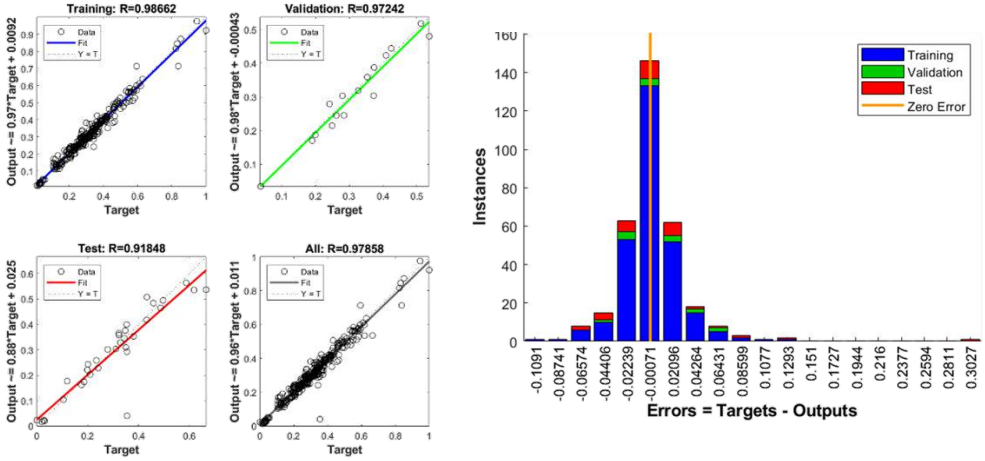

Figure B5.11 Regression coefficient and error histogram for model COMP_85_5_10-41

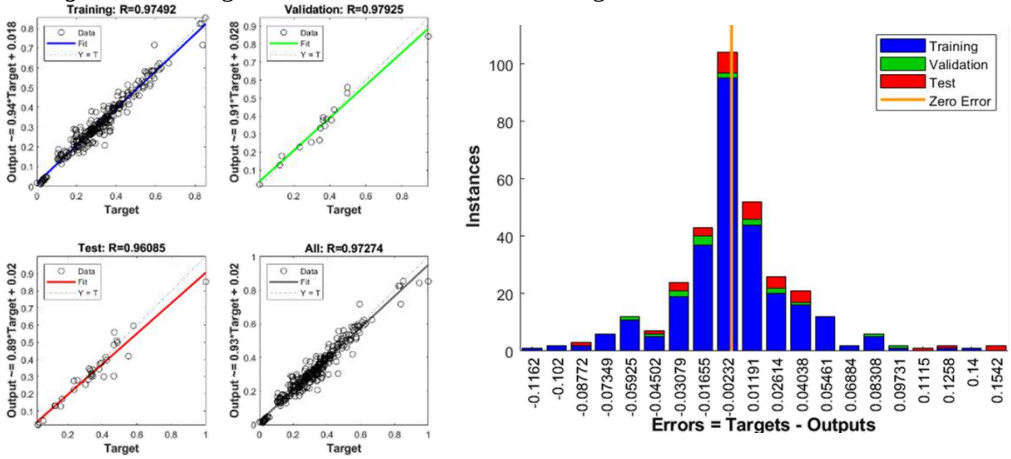

Figure B5.12 Regression coefficient and error histogram for model COMP_85_5_10-60

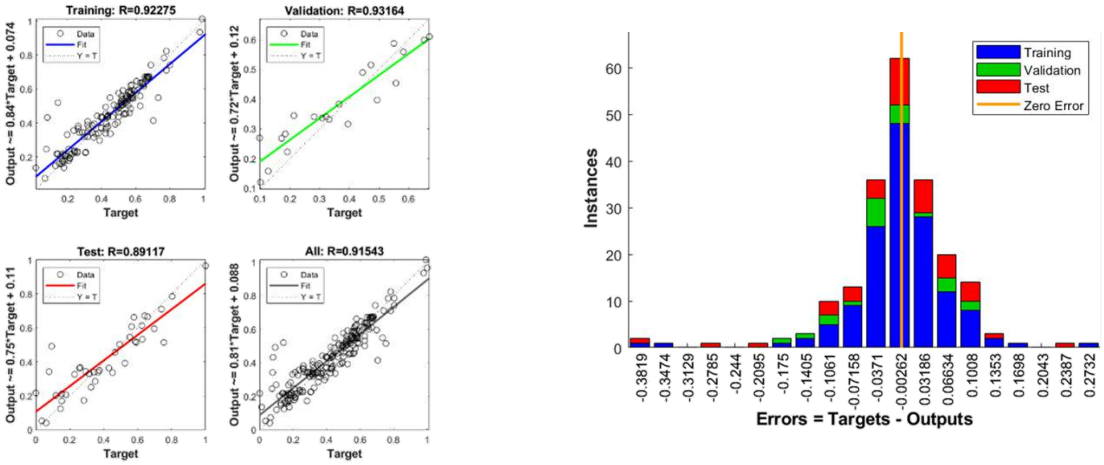

Figure B5.13 Regression coefficient and error histogram for model FLEX_70_10_20-16

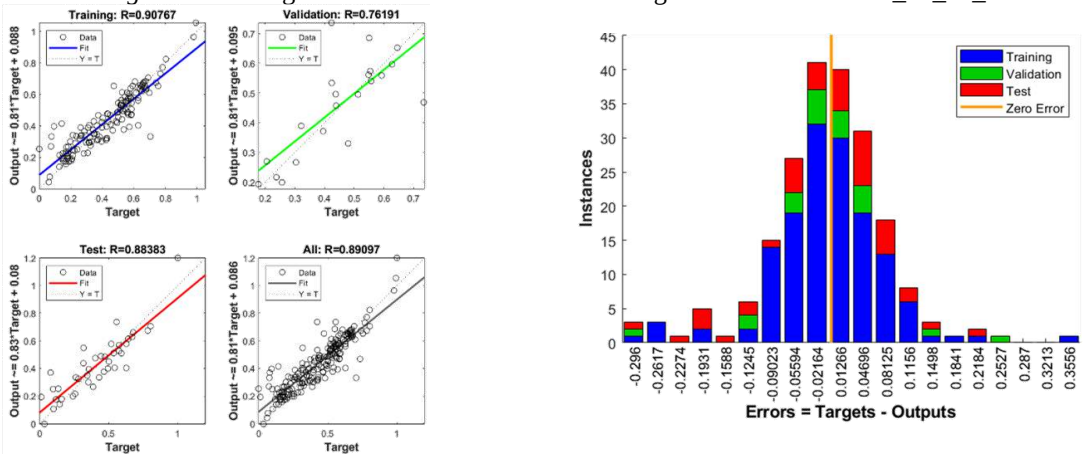

Figure B5.14 Regression coefficient and error histogram for model FLEX_70_10_20-33

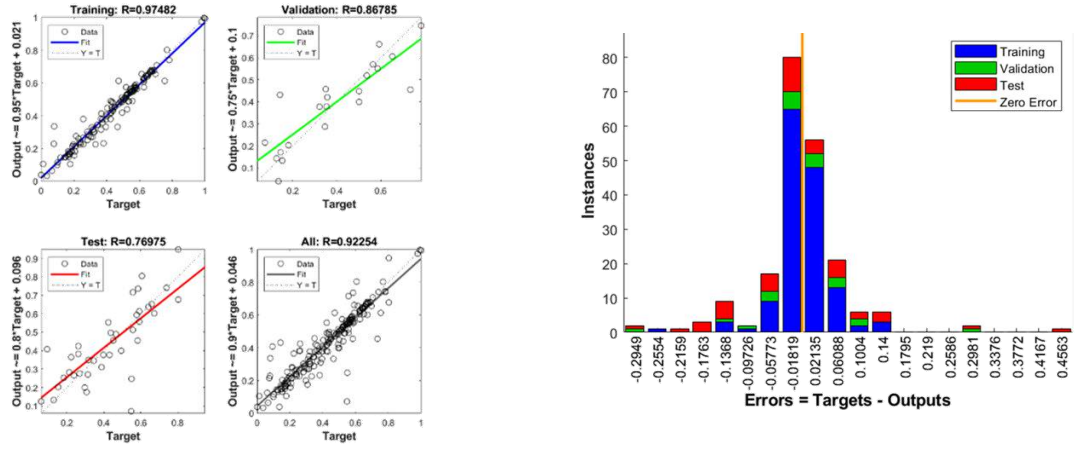

Figure B5.15 Regression coefficient and error histogram for model FLEX_70_10_20-48

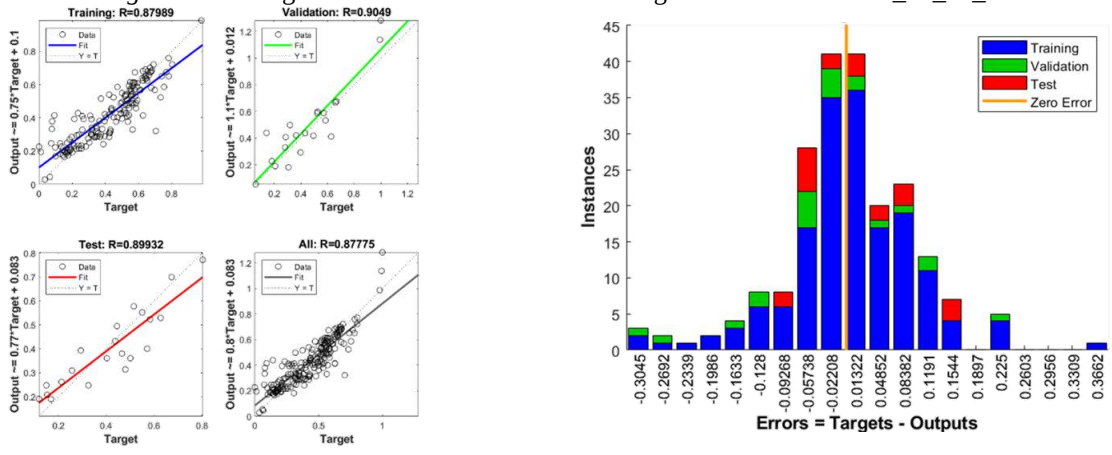

Figure B5.16 Regression coefficient and error histogram for model FLEX_80_10_10-16

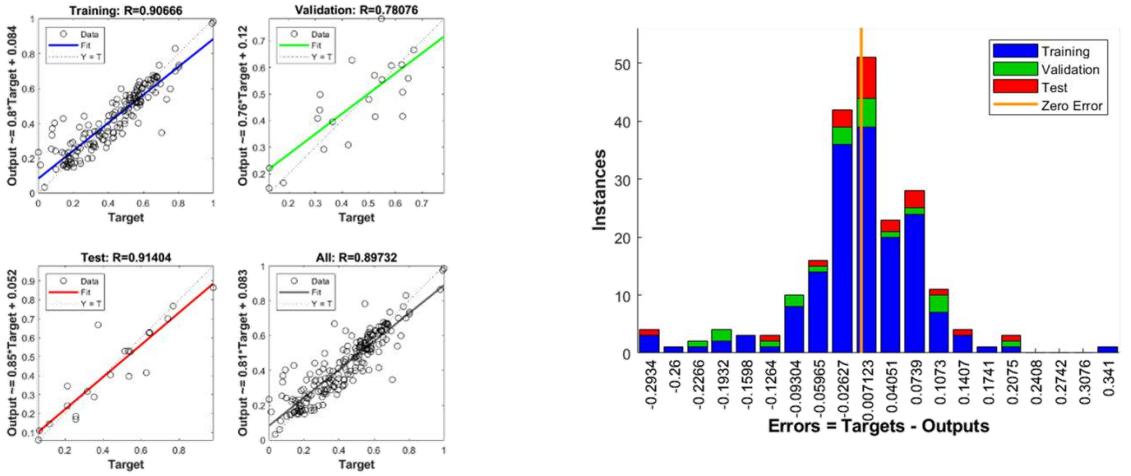

Figure B5.17 Regression coefficient and error histogram for model FLEX_80_10_10-33

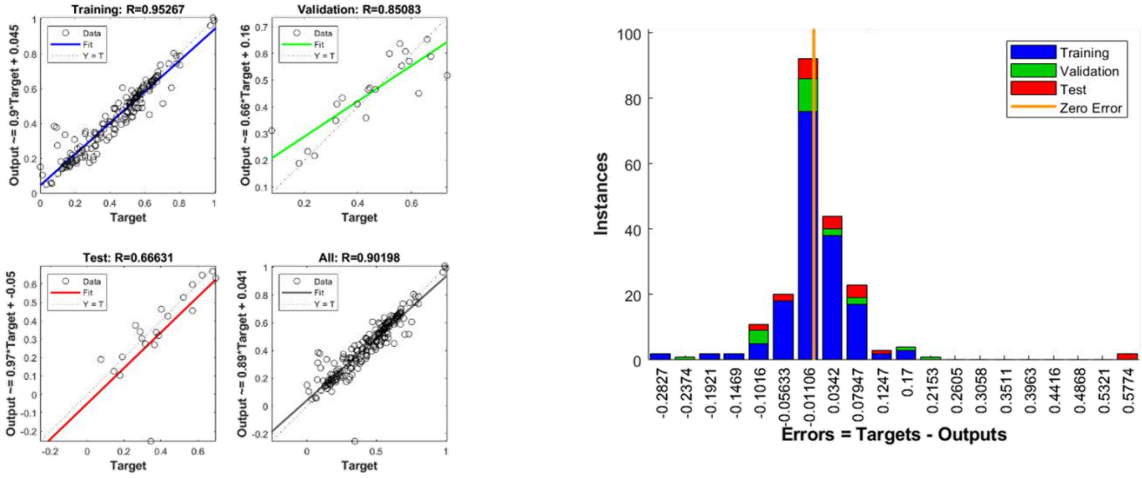

Figure B5.18 Regression coefficient and error histogram for model FLEX_80_10_10-48

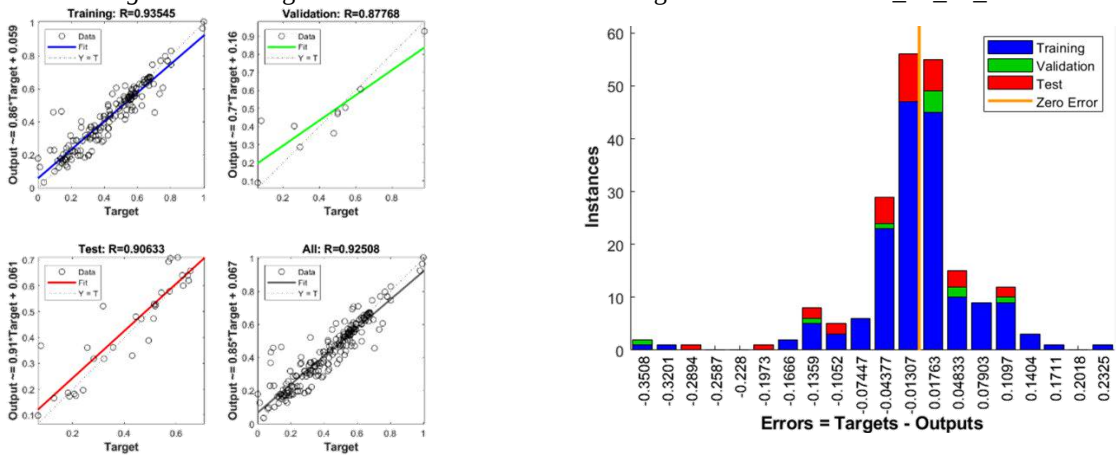

Figure B5.19 Regression coefficient and error histogram for model FLEX_80_5_15-16

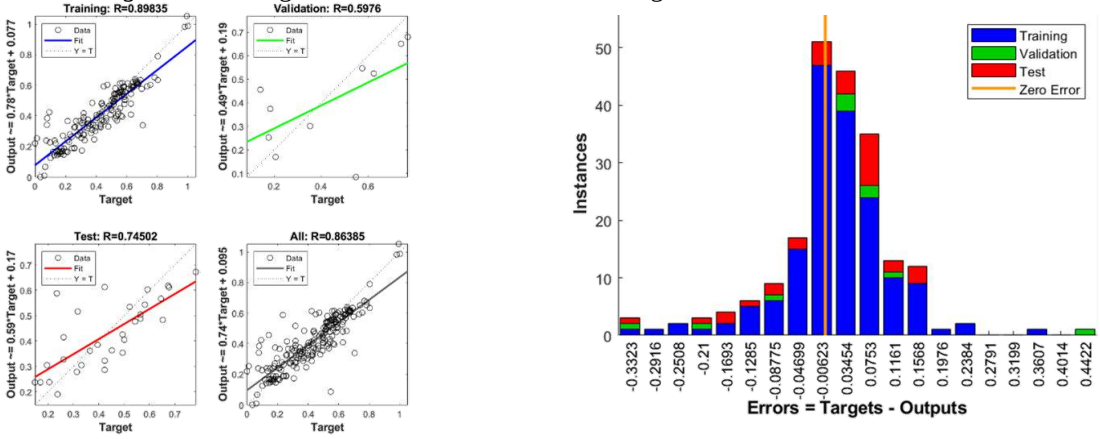

Figure B5.20 Regression coefficient and error histogram for model FLEX_80_5_15-33

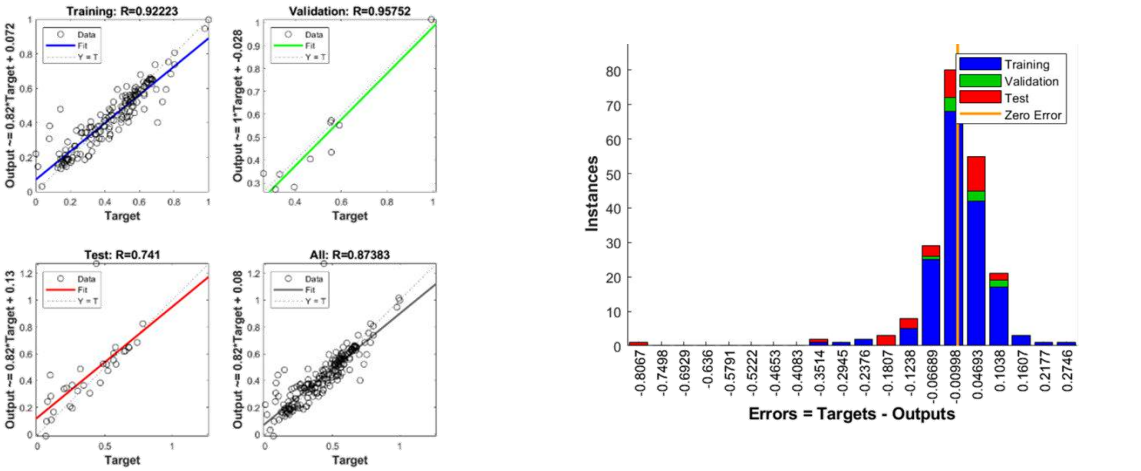

Figure B5.21 Regression coefficient and error histogram for model FLEX_80_5_15-48

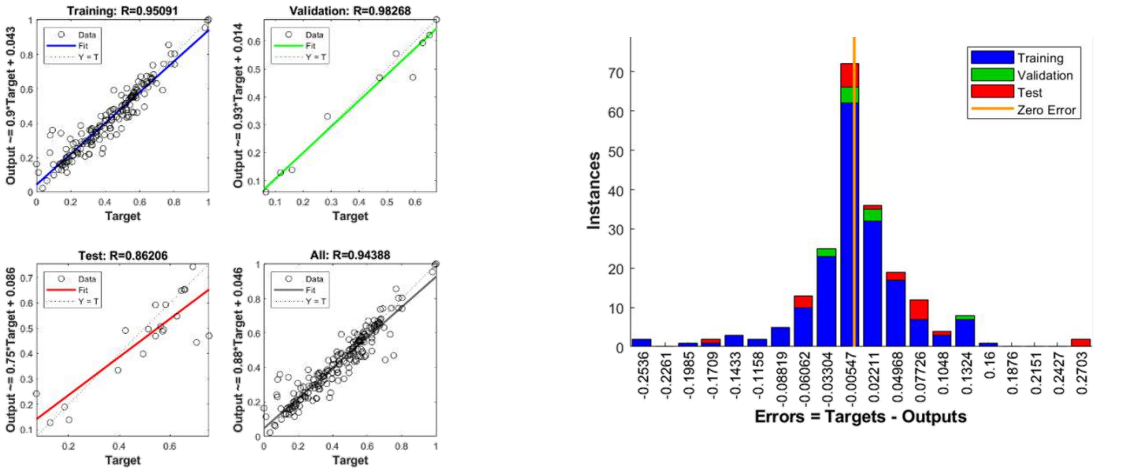

Figure B5.22 Regression coefficient and error histogram for model FLEX_85_5_10-16

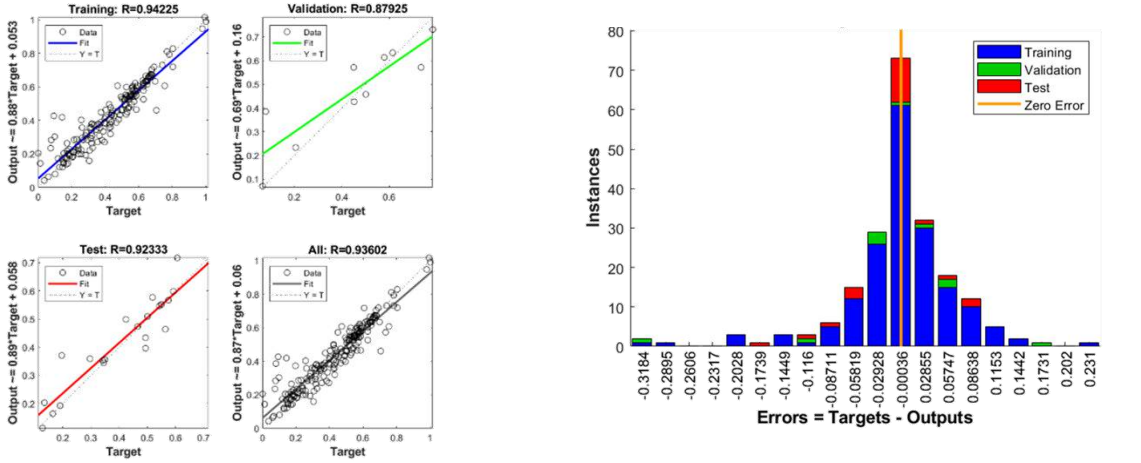

Figure B5.23 Regression coefficient and error histogram for model FLEX_85_5_10-33

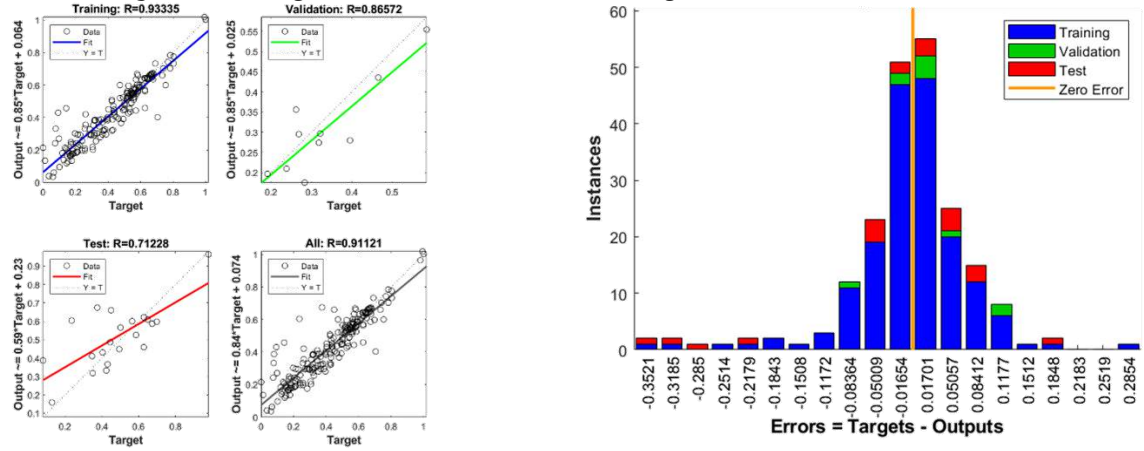

Figure B5.24 Regression coefficient and error histogram for model FLEX_85_5_10-48

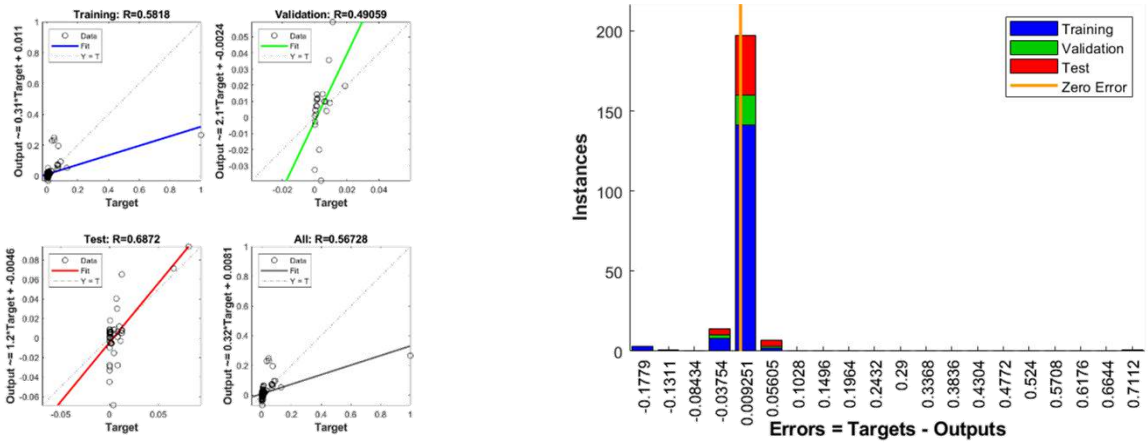

Figure B5.25 Regression coefficient and error histogram for model RES_70_10_20-17

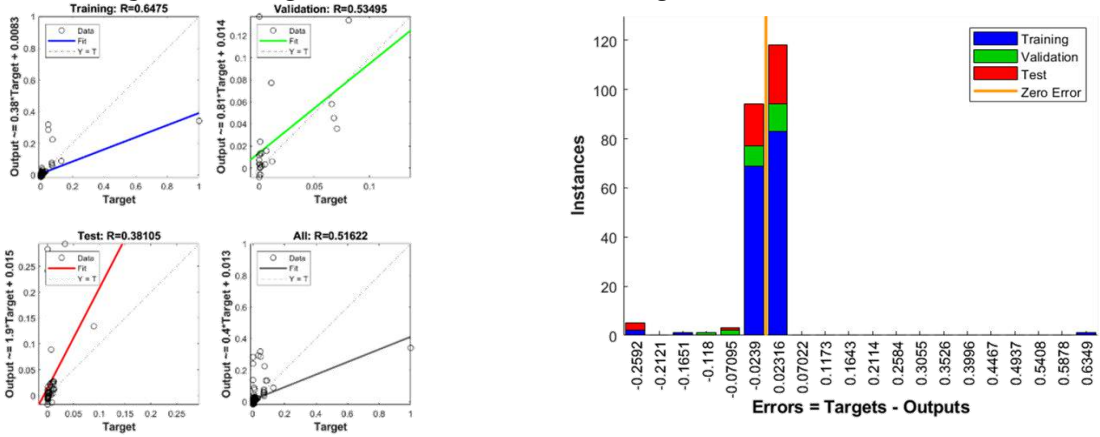

Figure B5.26 Regression coefficient and error histogram for model RES_70_10_20-35

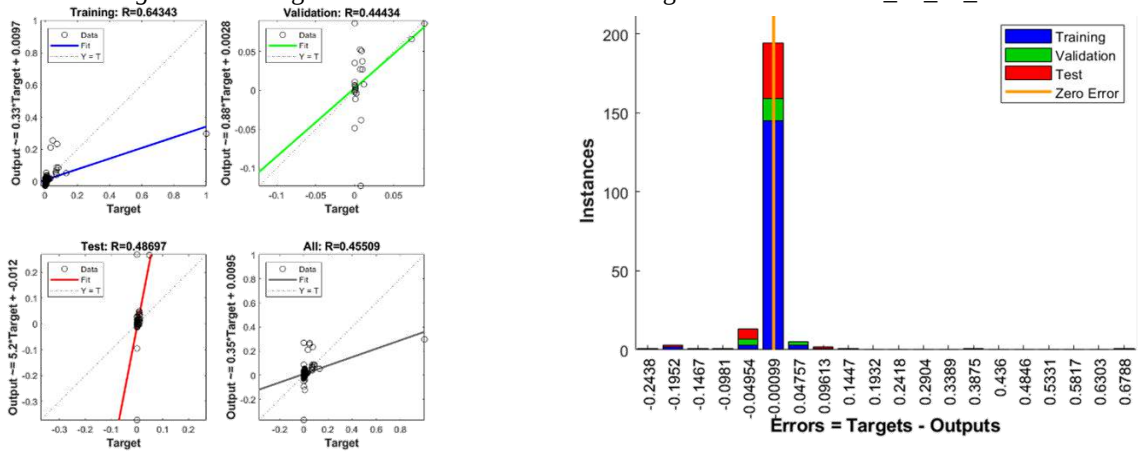

Figure B5.27 Regression coefficient and error histogram for model RES_70_10_20-51

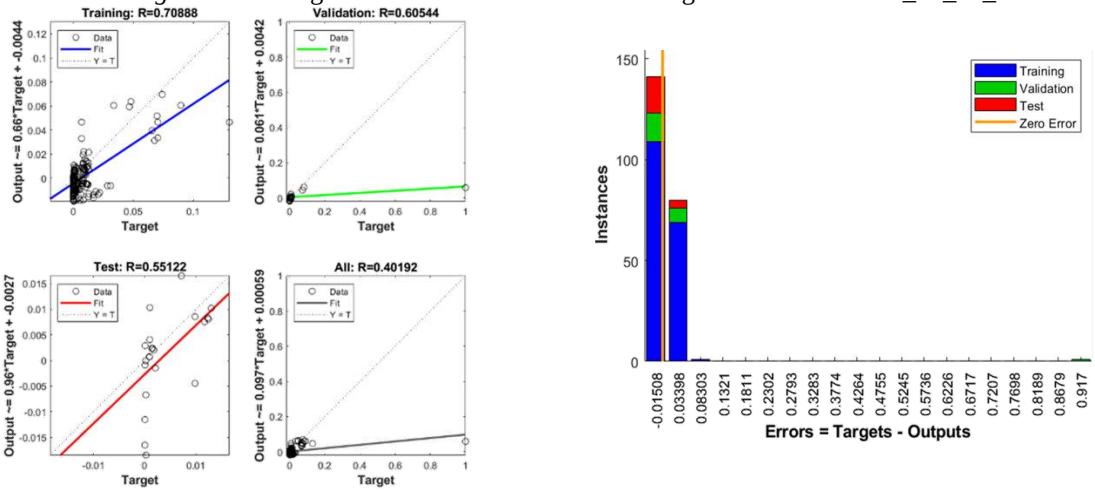

Figure B5.28 Regression coefficient and error histogram for model RES_80_10_10-17

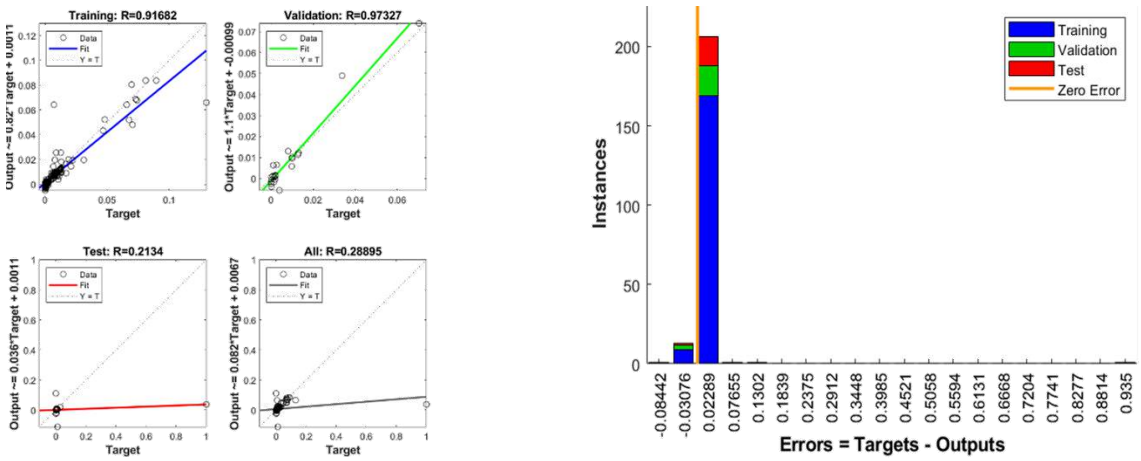

Figure B5.29 Regression coefficient and error histogram for model RES_80_10_10-35

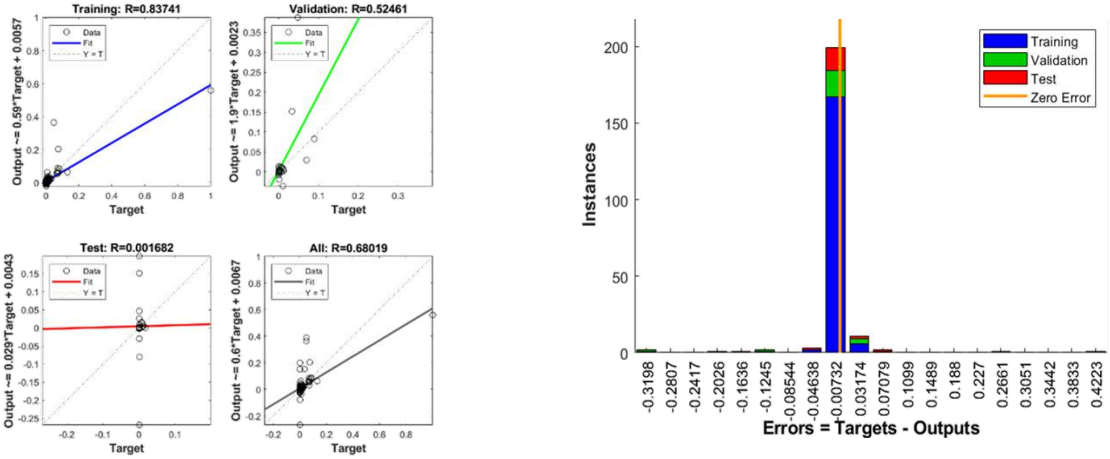

Figure B5.30 Regression coefficient and error histogram for model RES_80_10_10-51

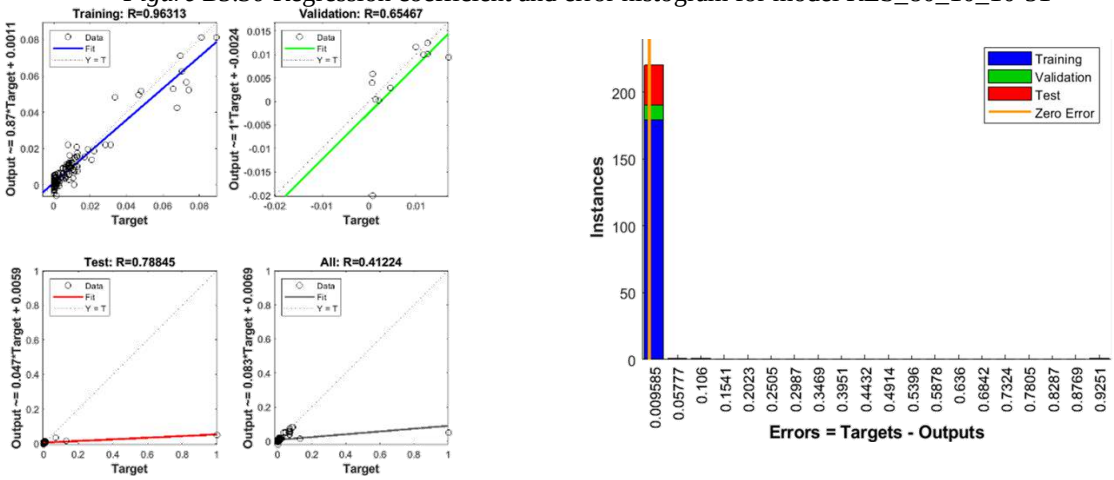

Figure B5.31 Regression coefficient and error histogram for model RES_80_5_15-17

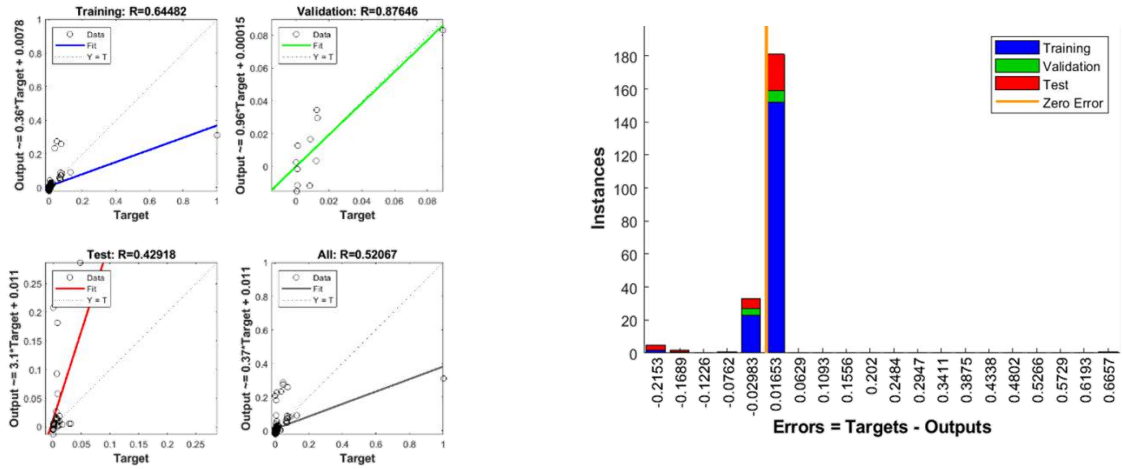

Figure B5.32 Regression coefficient and error histogram for model RES_80_5_15-35

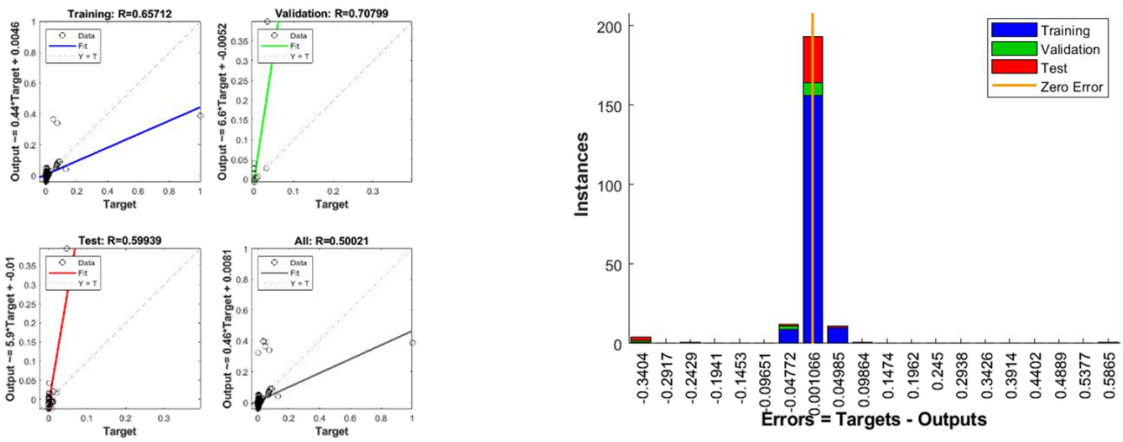

Figure B5.33 Regression coefficient and error histogram for model RES_80_5_15-51

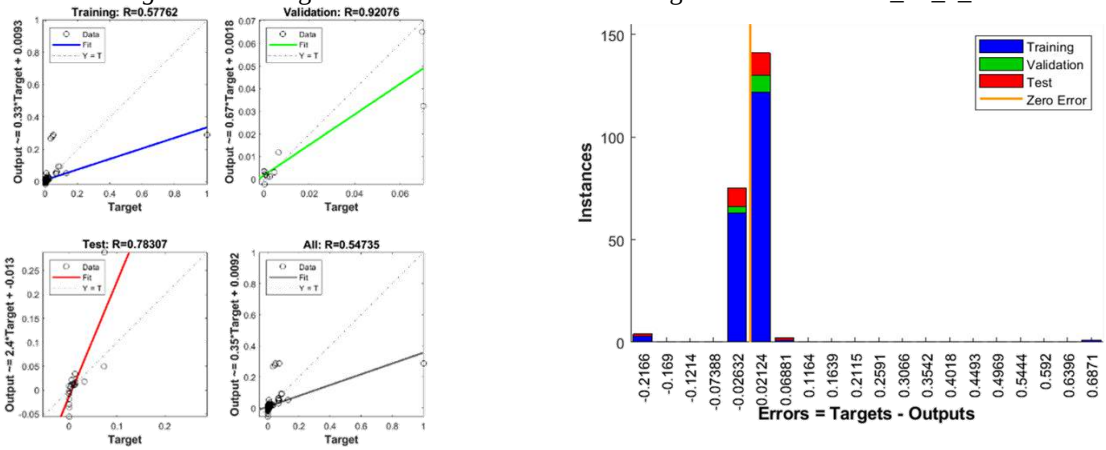

Figure B5.34 Regression coefficient and error histogram for model RES_85_5_10-17

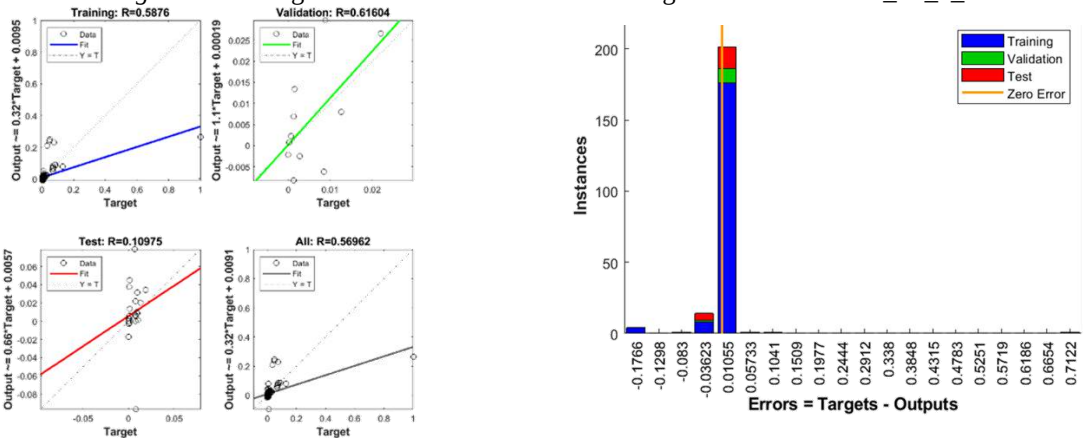

Figure B5.35 Regression coefficient and error histogram for model RES_85_5_10-35

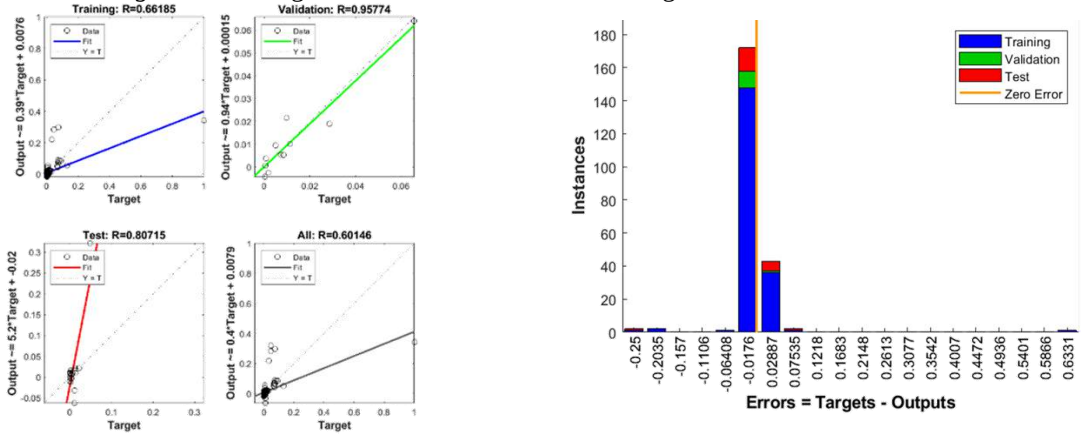

Figure B5.36 Regression coefficient and error histogram for model RES_85_5_10-51

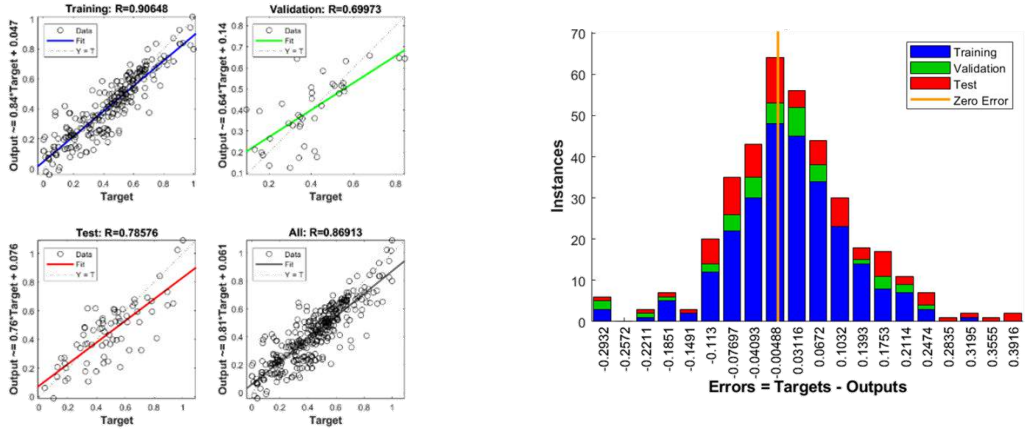

Figure B5.37 Regression coefficient and error histogram for model C+F_70_10_20-11

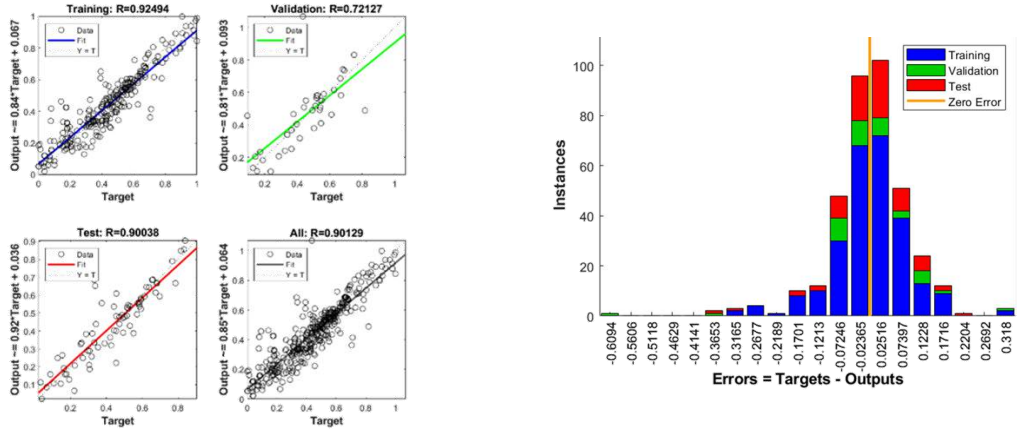

Figure B5.38 Regression coefficient and error histogram for model C+F_70_10_20-23

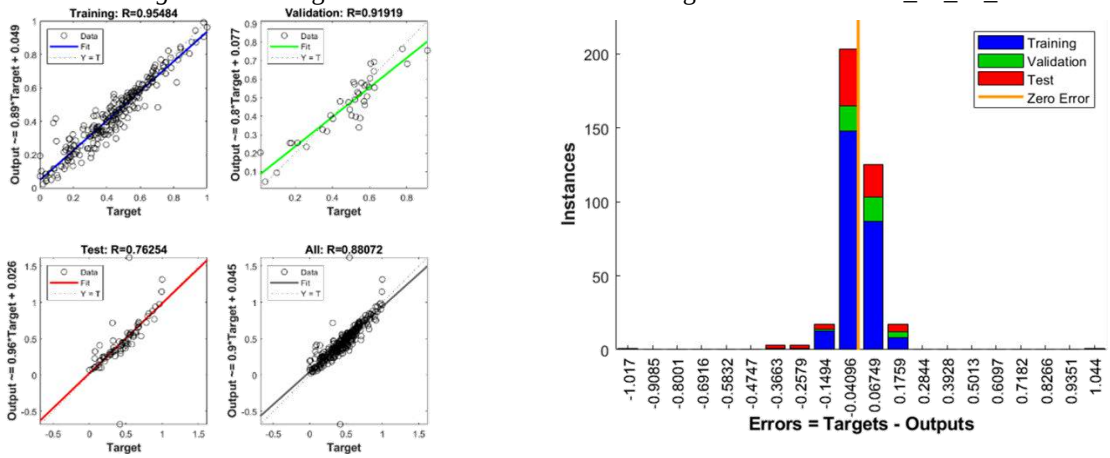

Figure B5.39 Regression coefficient and error histogram for model C+F_70_10_20-33

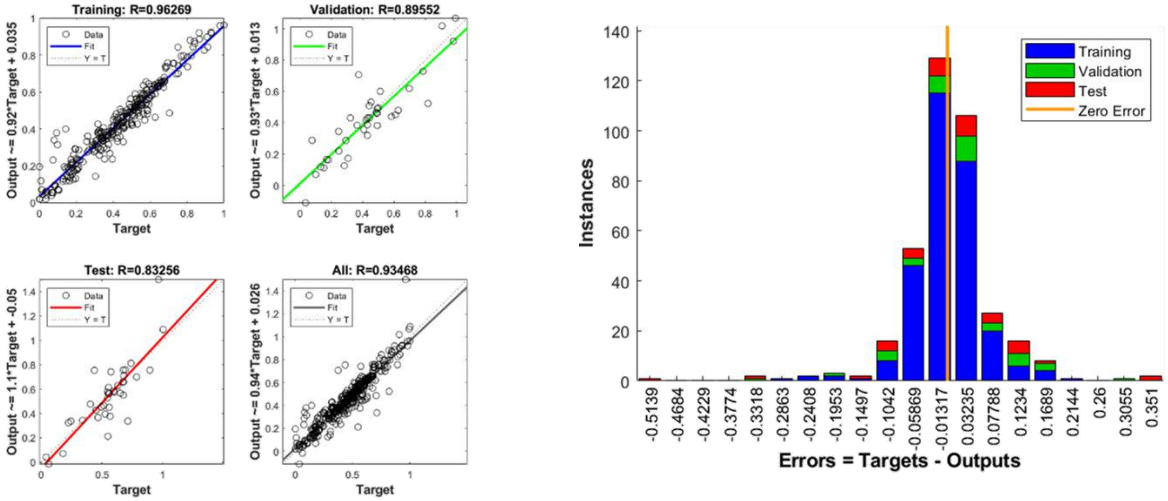

Figure B5.40 Regression coefficient and error histogram for model C+F_80_10_10-11

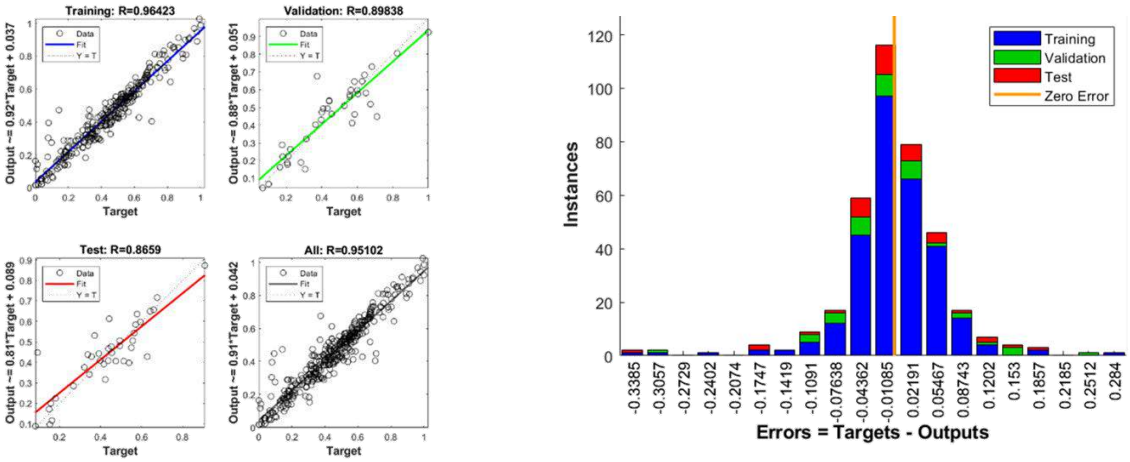

Figure B5.41 Regression coefficient and error histogram for model C+F_80_10_10-23

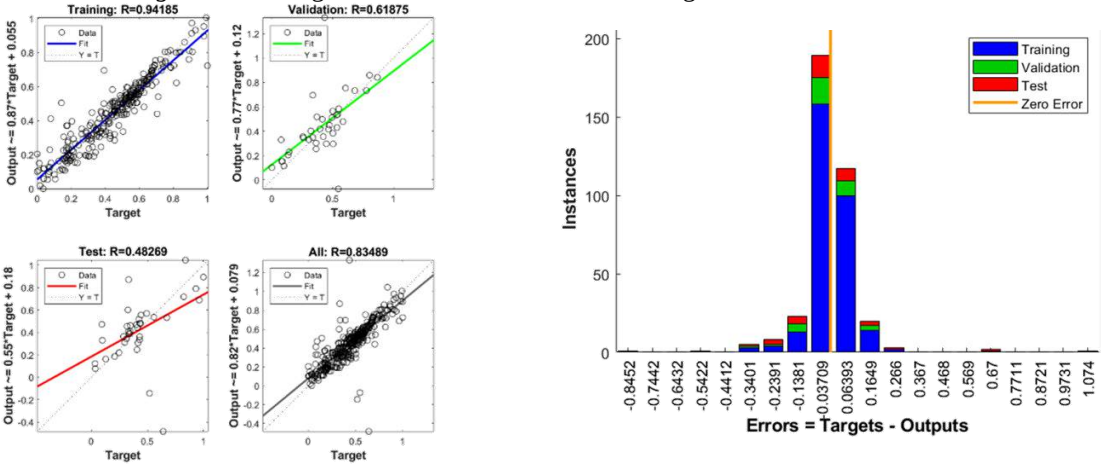

Figure B5.42 Regression coefficient and error histogram for model C+F_80_10_10-33

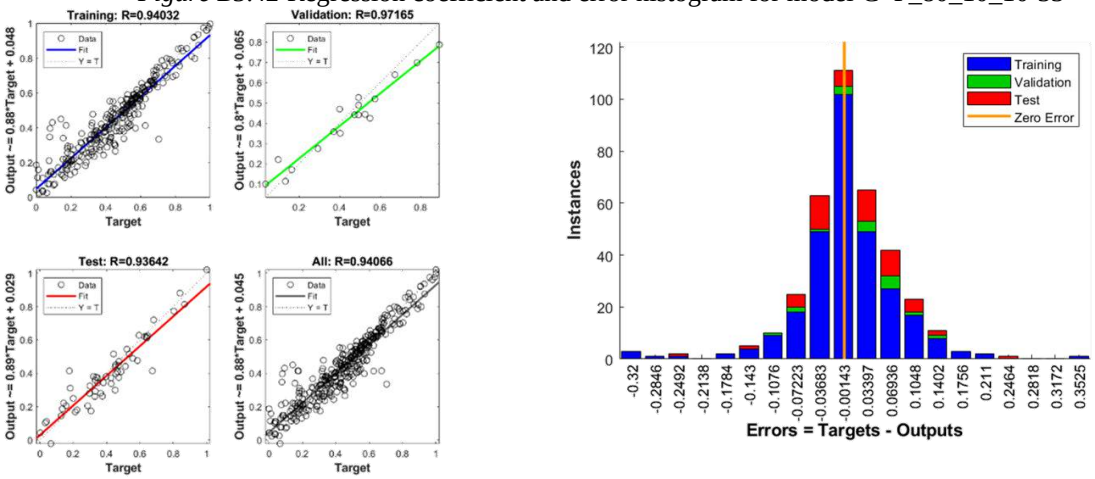

Figure B5.43 Regression coefficient and error histogram for model C+F_80_5_15-11

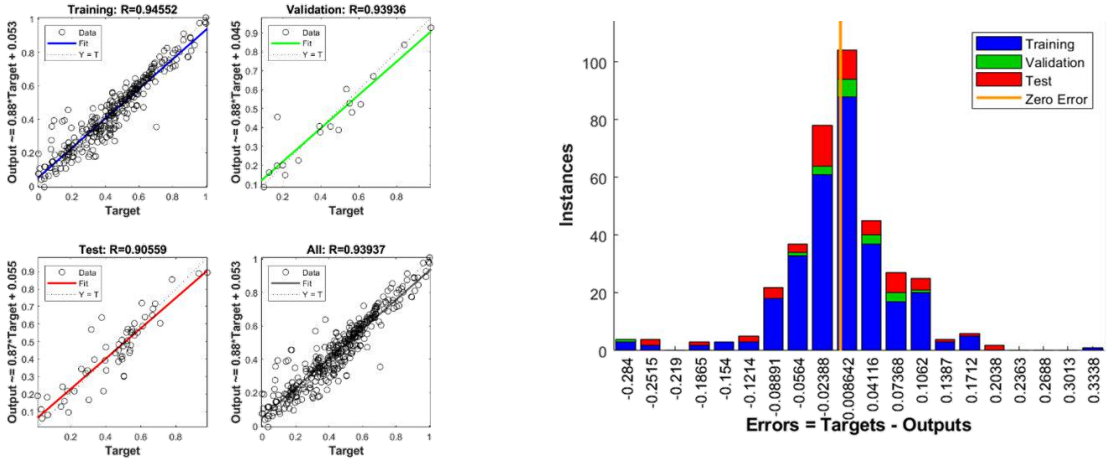

Figure B5.44 Regression coefficient and error histogram for model C+F_80_5_15-23

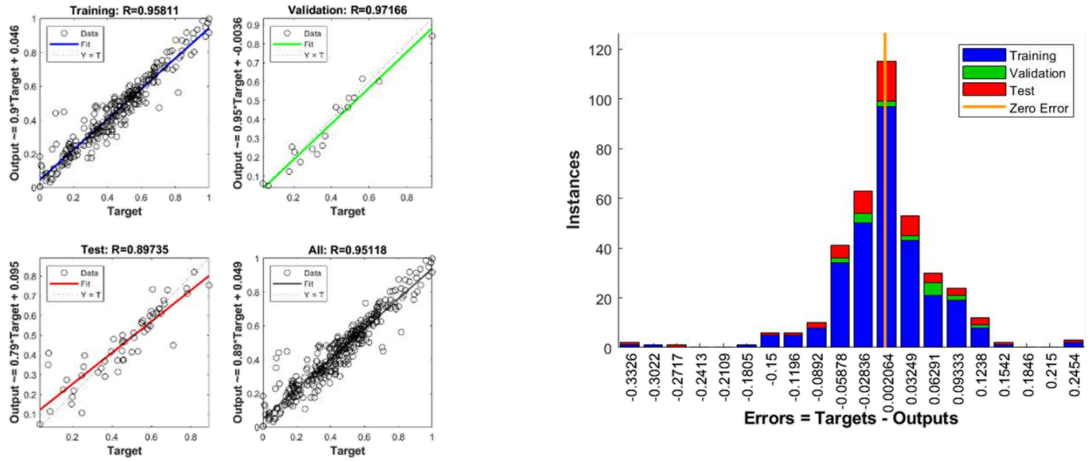

Figure B5.45 Regression coefficient and error histogram for model C+F_80_5_15-33

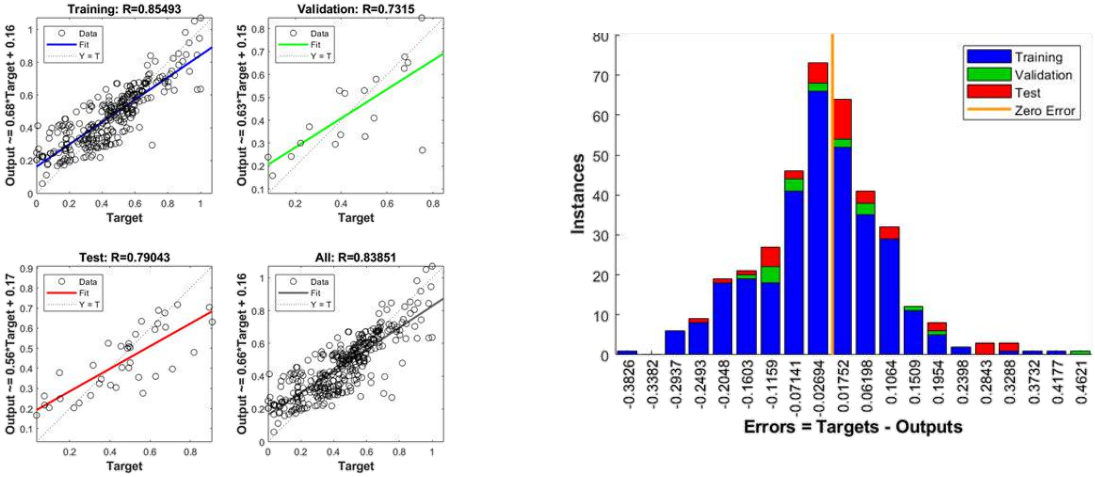

Figure B5.46 Regression coefficient and error histogram for model C+F_85_5_10-11

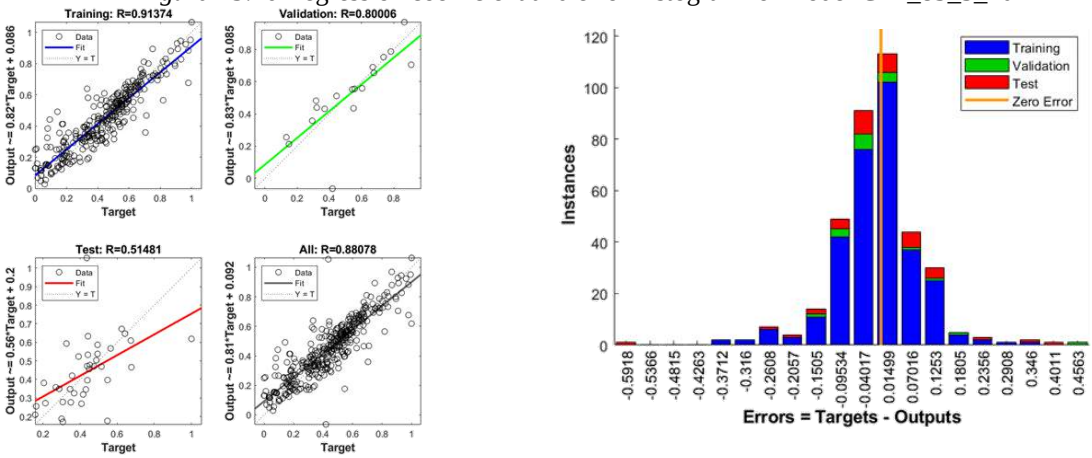

Figure B5.47 Regression coefficient and error histogram for model C+F_85_5_10-23

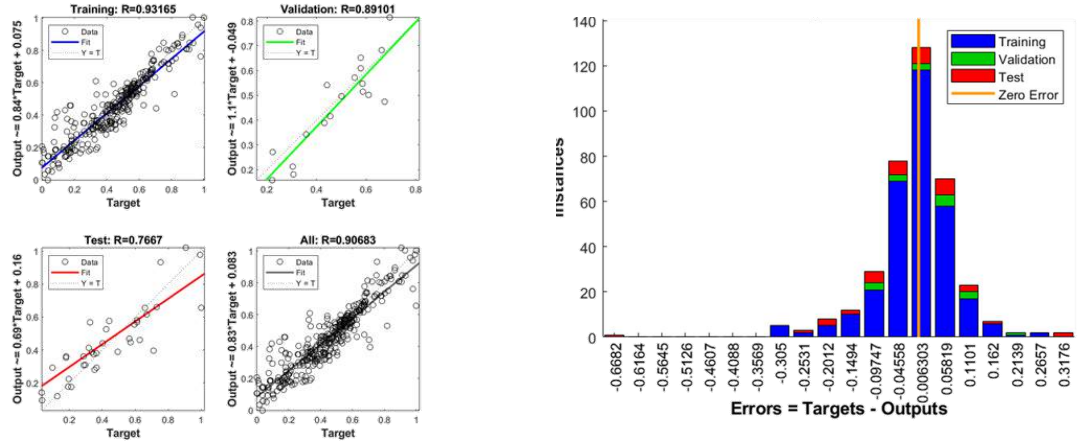

Figure B5.48 Regression coefficient and error histogram for model C+F_85_5_10-33

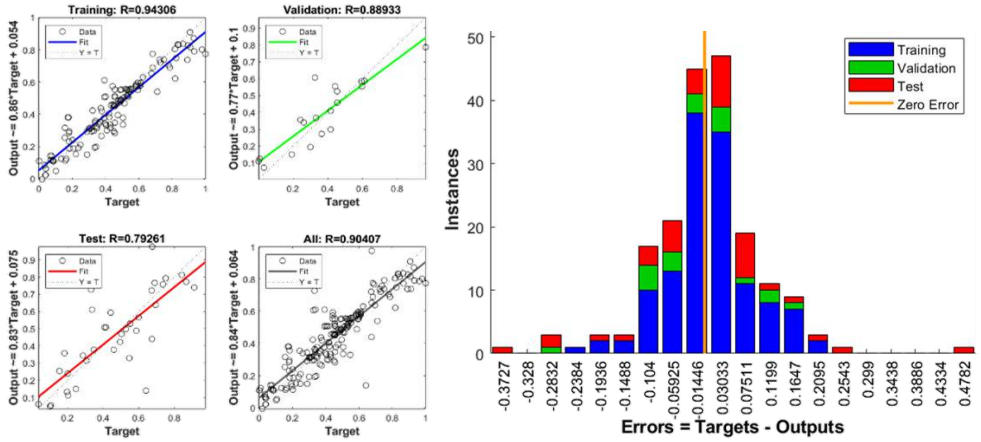

Figure B5.49 Regression coefficient and error histogram for model C+F(C)_70_10_20-11

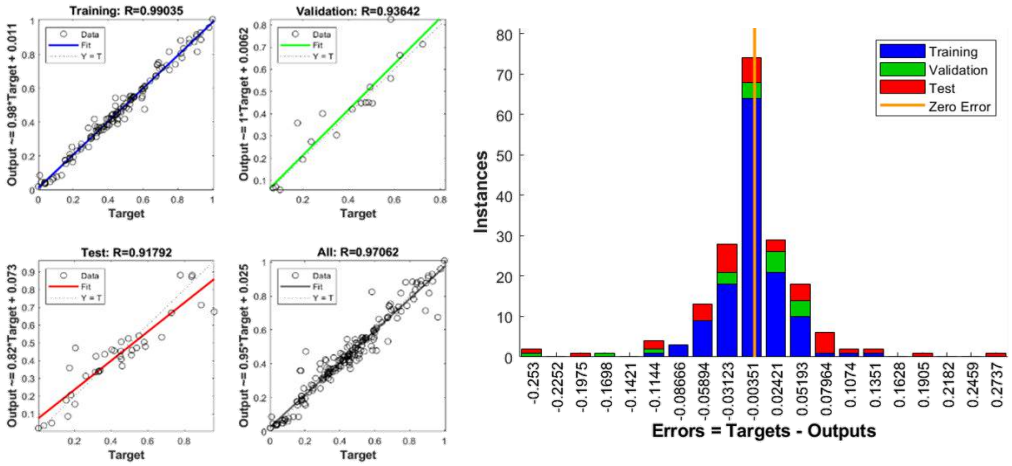

Figure B5.50 Regression coefficient and error histogram for model C+F(C)_70_10_20-23

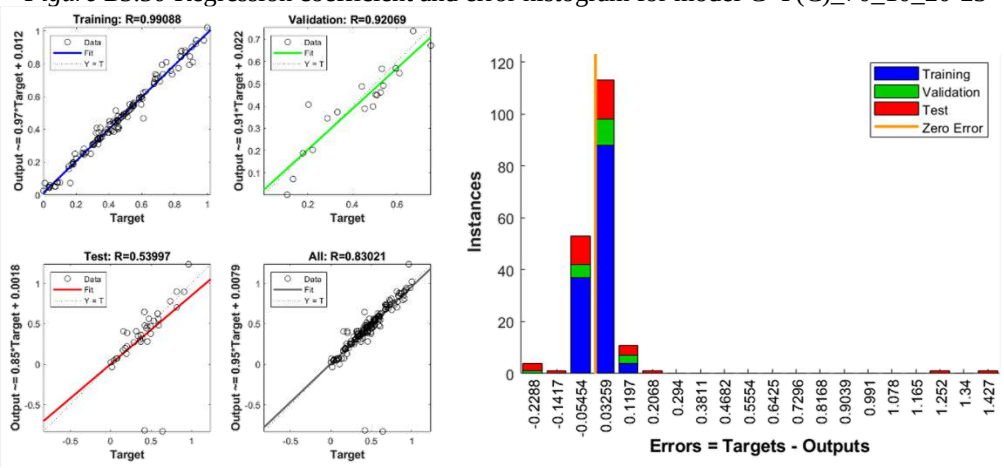

Figure B5.51 Regression coefficient and error histogram for model C+F(C)_70_10_20-33

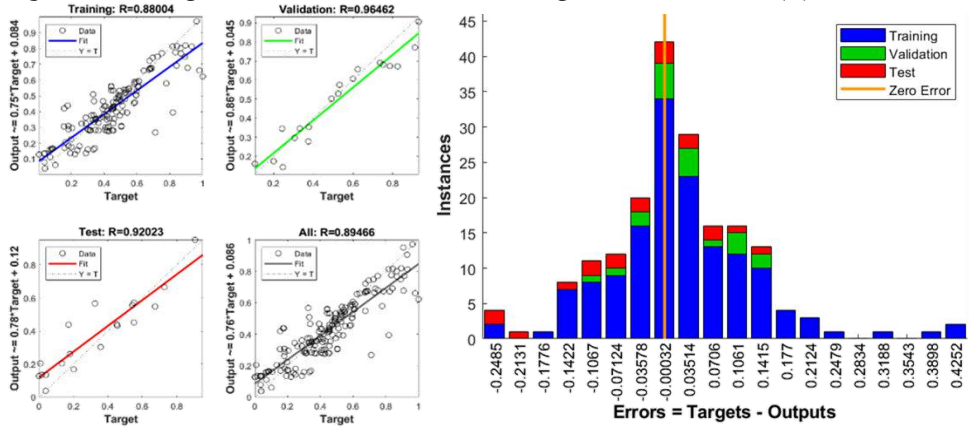

Figure B5.52 Regression coefficient and error histogram for model C+F(C)_80_10_10-11

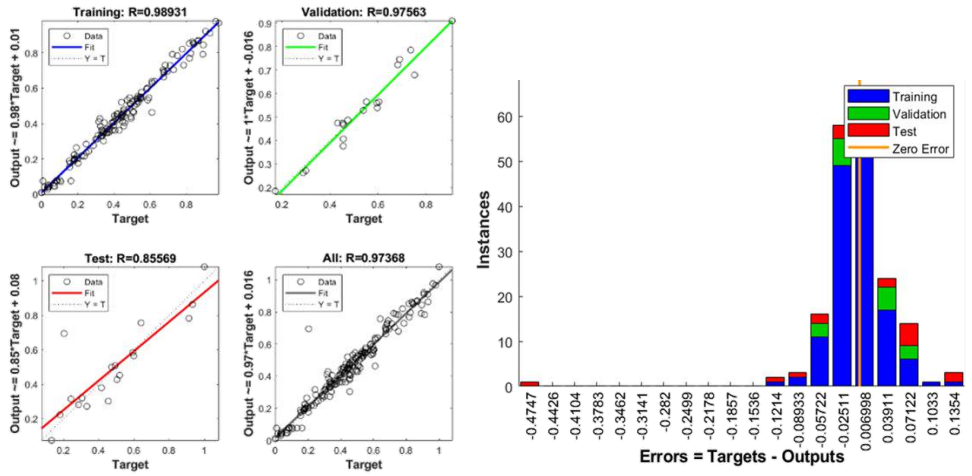

Figure B5.53 Regression coefficient and error histogram for model C+F(C)_80_10_10-23

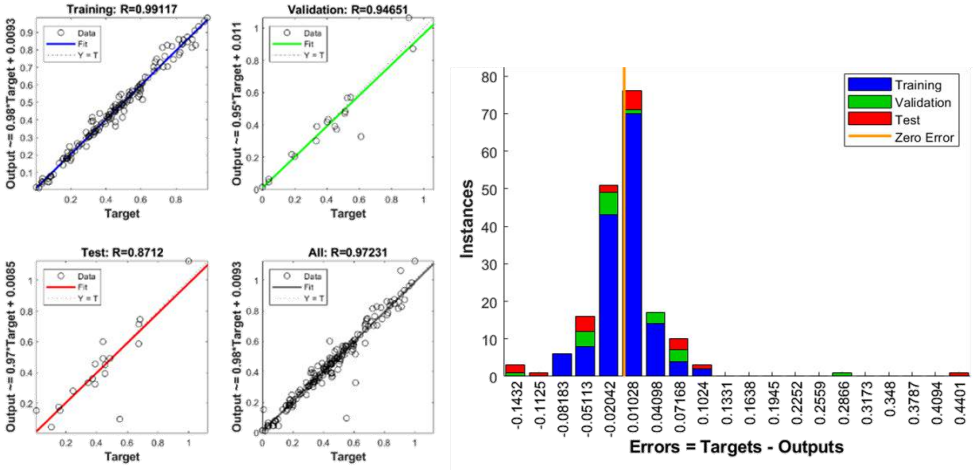

Figure B5.54 Regression coefficient and error histogram for model C+F(C)_80_10_10-33

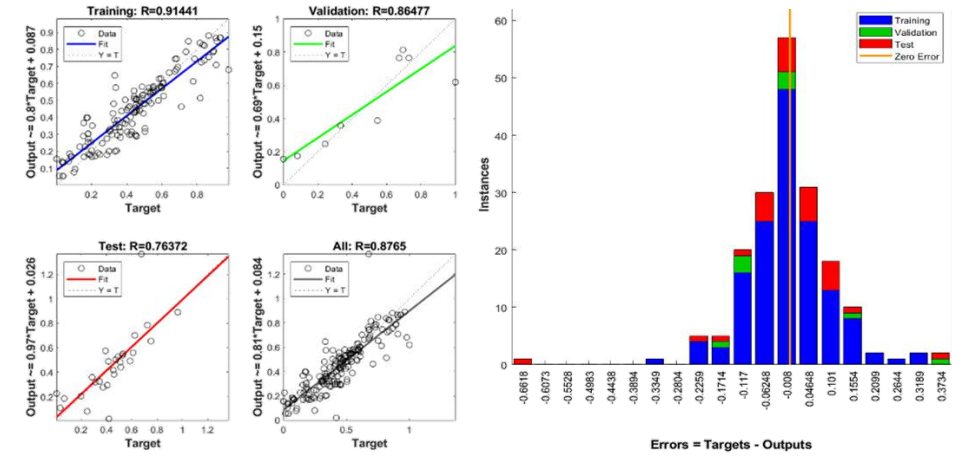

Figure B5.55 Regression coefficient and error histogram for model C+F(C)_80_5_15-11

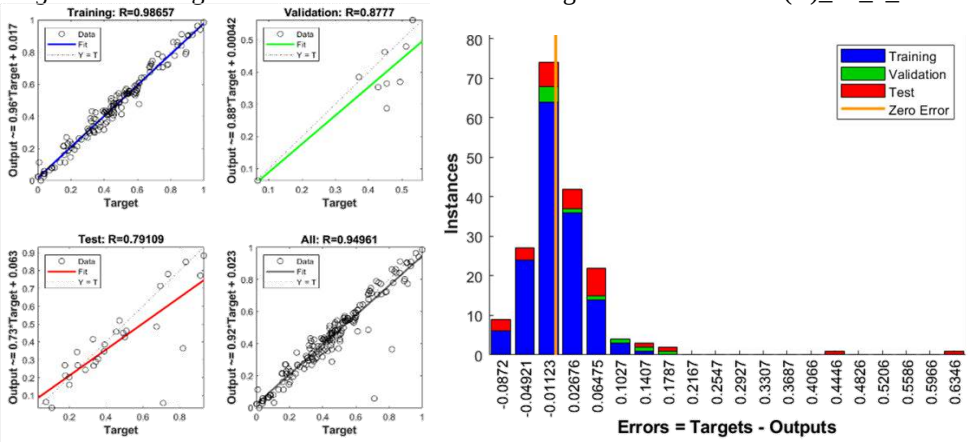

Figure B5.56 Regression coefficient and error histogram for model C+F(C)_80_5_15-23

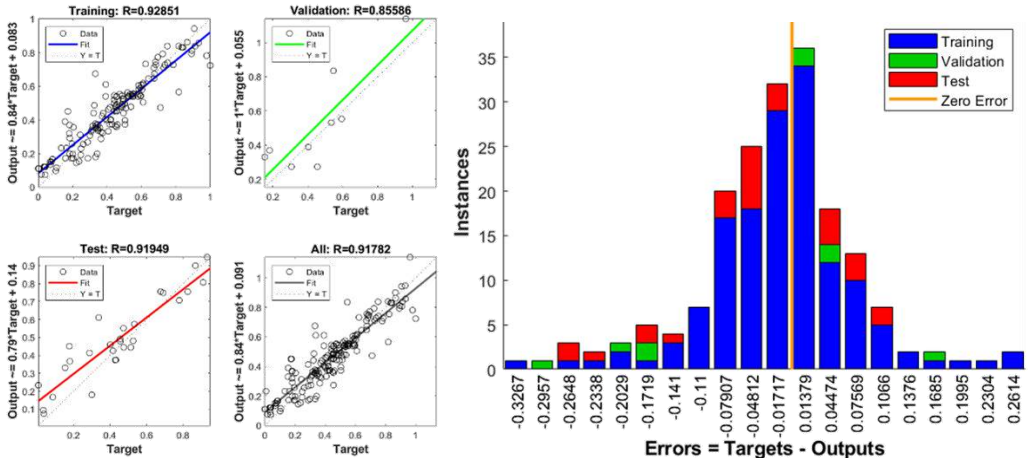

Figure B5.57 Regression coefficient and error histogram for model C+F(C)_80_5_15-33

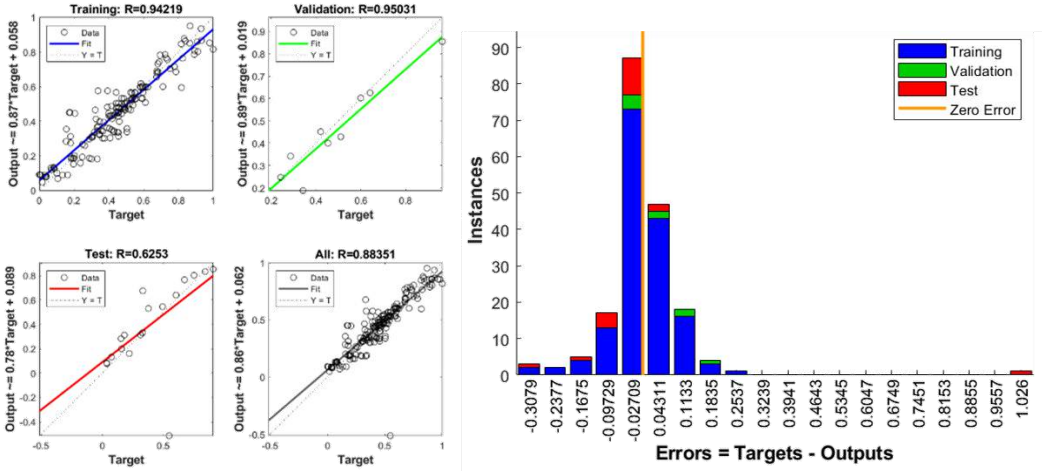

Figure B5.58 Regression coefficient and error histogram for model C+F(C)_85_5_10-11

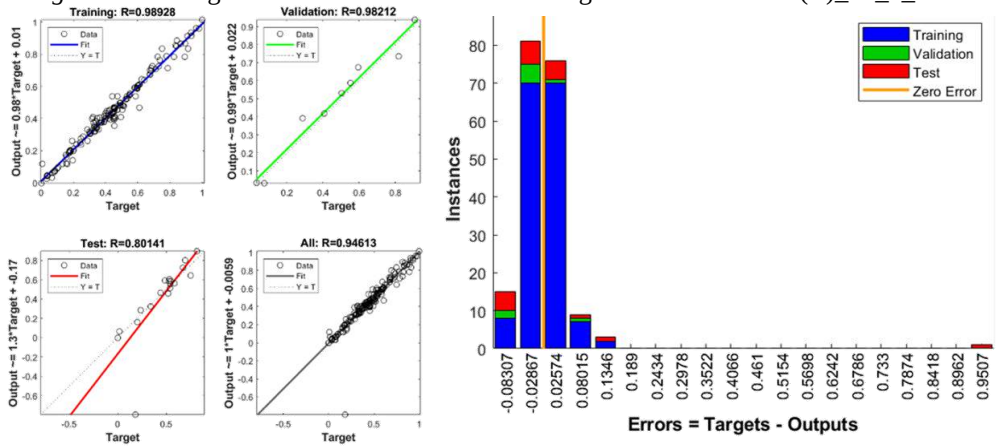

Figure B5.59 Regression coefficient and error histogram for model C+F(C)_85_5_10-23

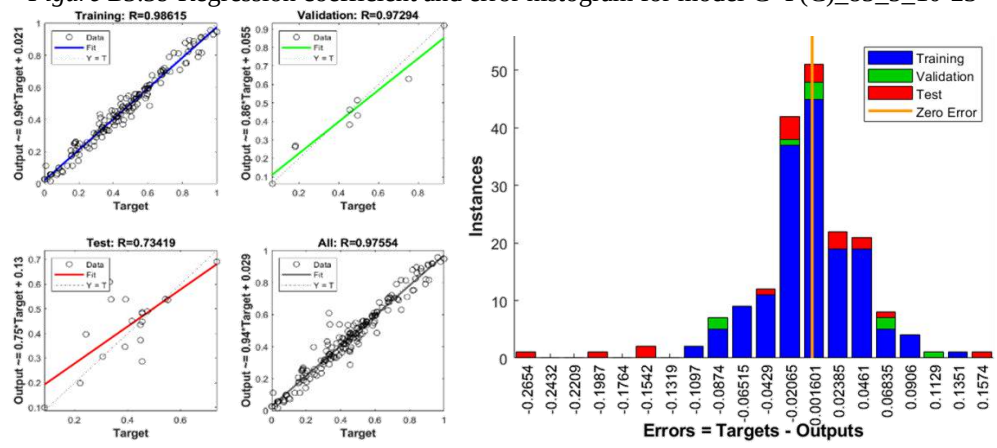

Figure B5.60 Regression coefficient and error histogram for model C+F(C)_85_5_10-33

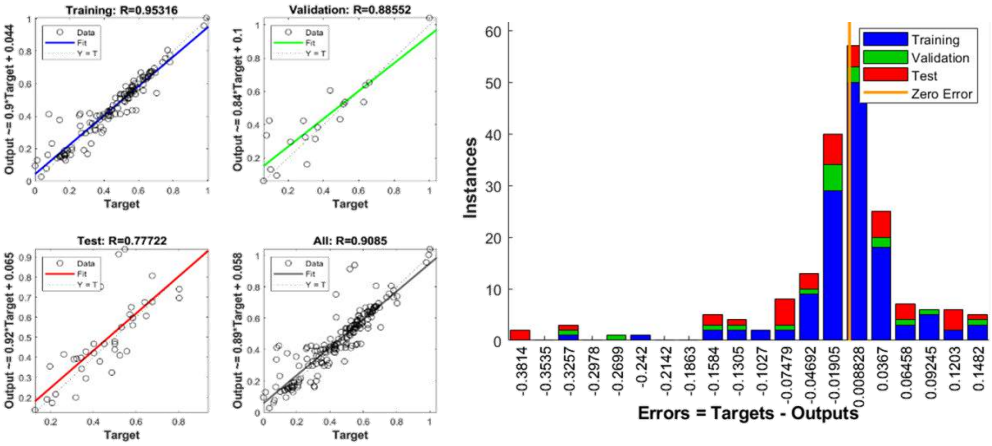

Figure B5.61 Regression coefficient and error histogram for model C+F(F)_70_10_20-11

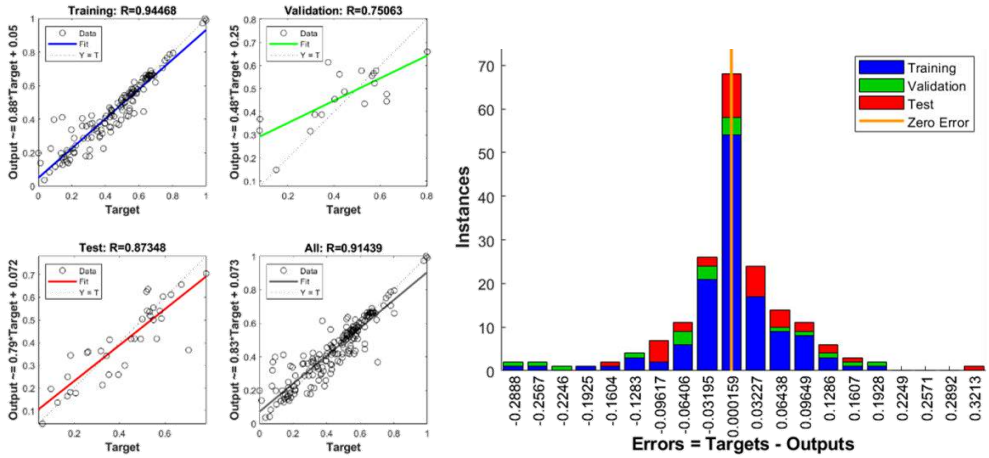

Figure B5.62 Regression coefficient and error histogram for model C+F(F)_70_10_20-23

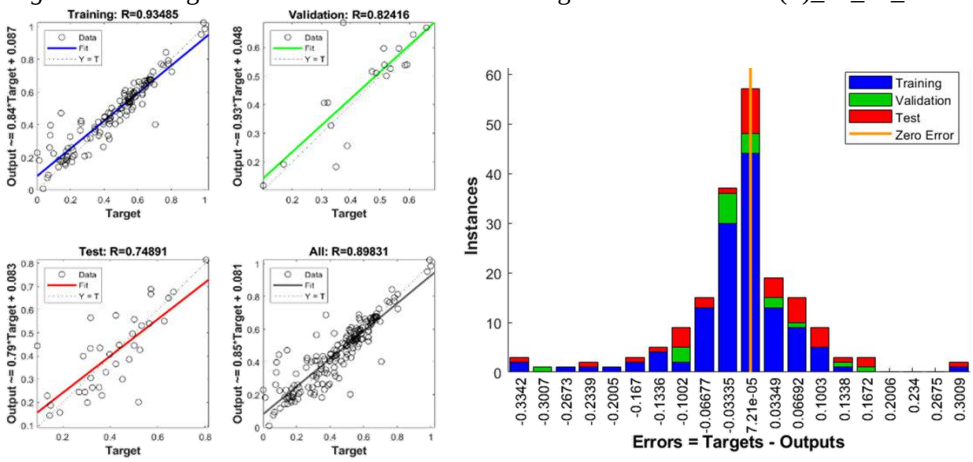

Figure B5.63 Regression coefficient and error histogram for model C+F(F)_70_10_20-33

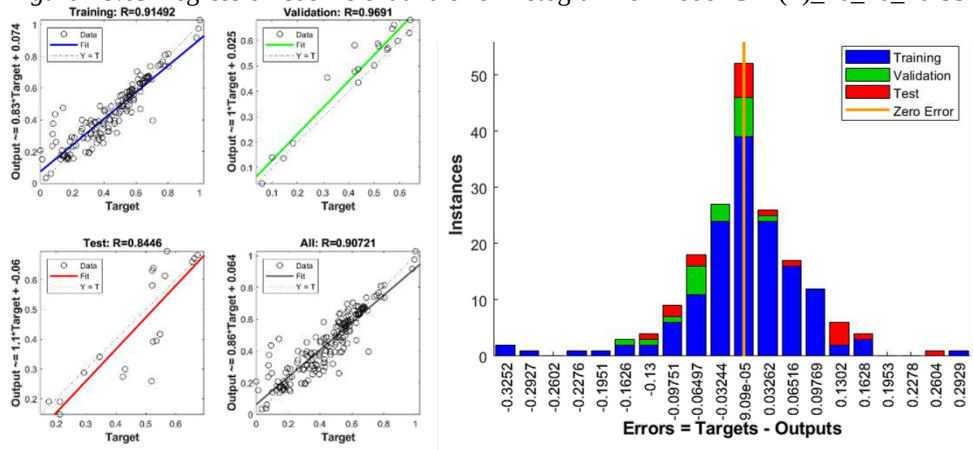

Figure B5.64 Regression coefficient and error histogram for model C+F(F)_80_10_10-11

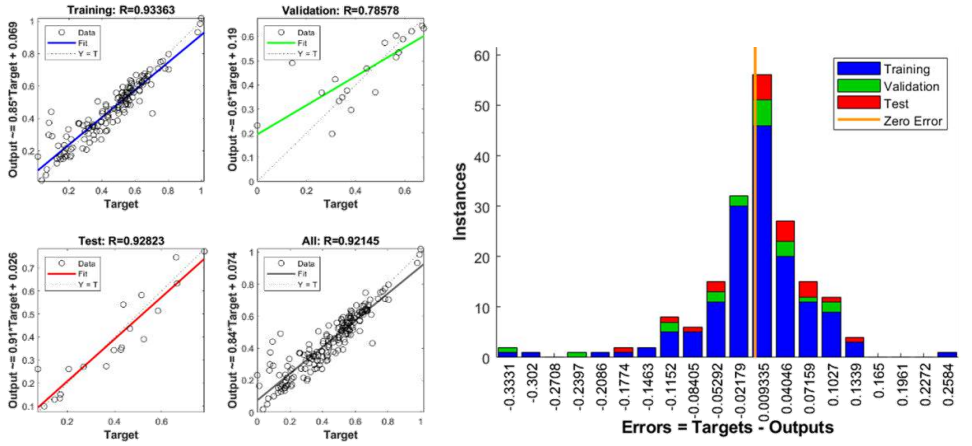

Figure B5.65 Regression coefficient and error histogram for model C+F(F)_80_10_10-23

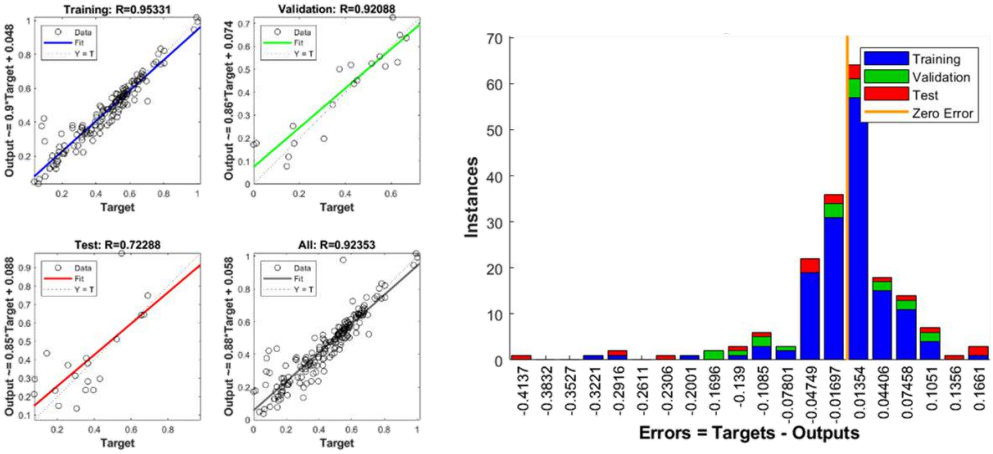

Figure B5.66 Regression coefficient and error histogram for model C+F(F)_80_10_10-33

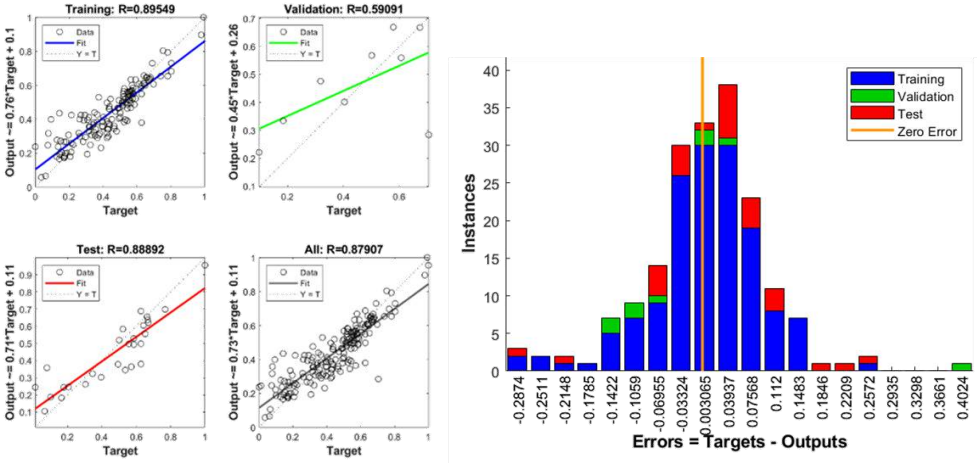

Figure B5.67 Regression coefficient and error histogram for model C+F(F)_80_5_15-11

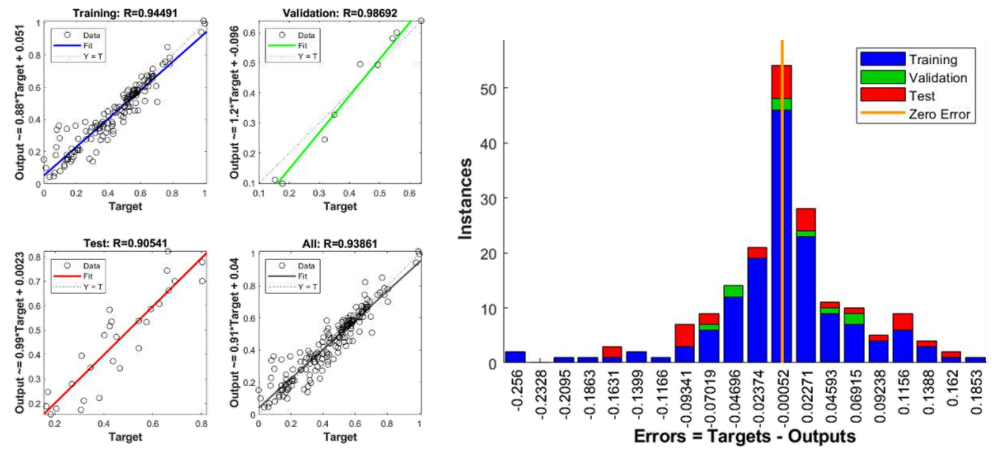

Figure B5.68 Regression coefficient and error histogram for model C+F(F)_80_5_15-23

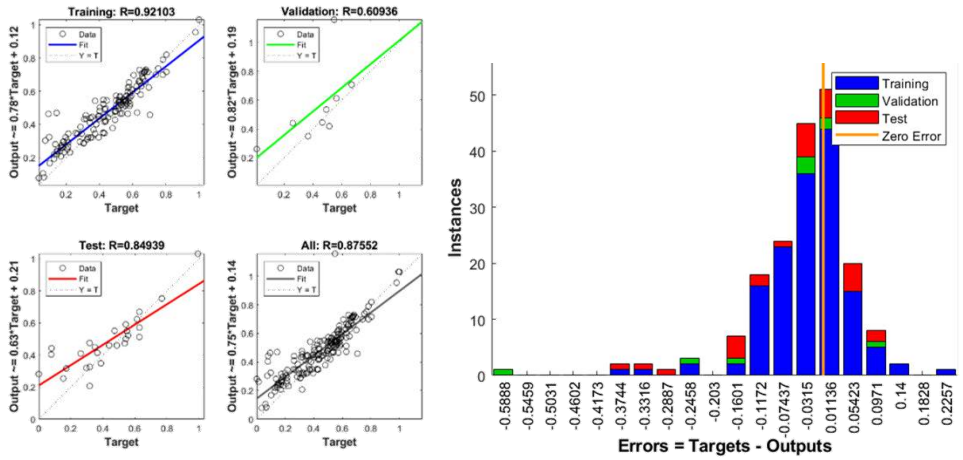

Figure B5.69 Regression coefficient and error histogram for model C+F(F)_80_5_15-33

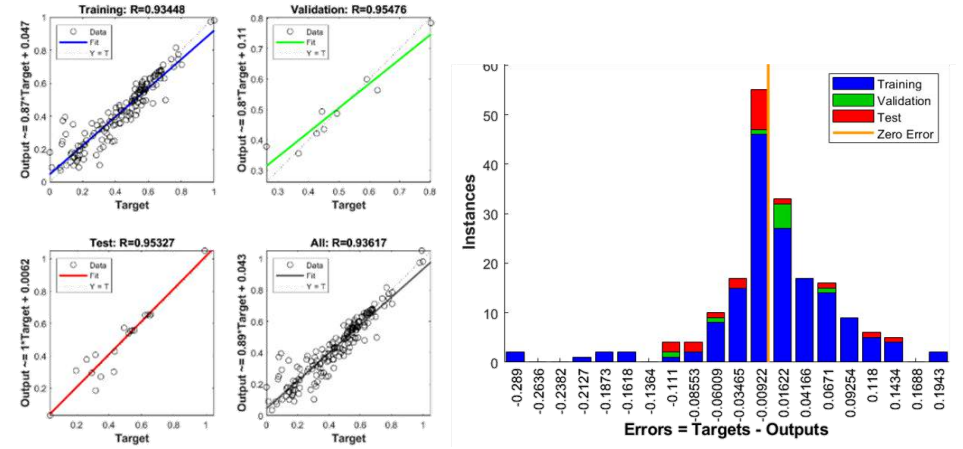

Figure B5.70 Regression coefficient and error histogram for model C+F(F)_85_5_10-11

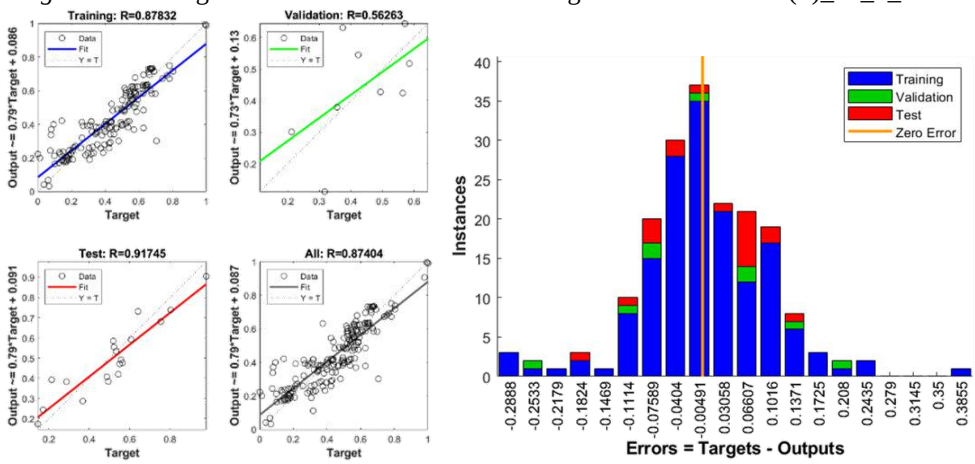

Figure B5.71 Regression coefficient and error histogram for model C+F(F)_85_5_10-23

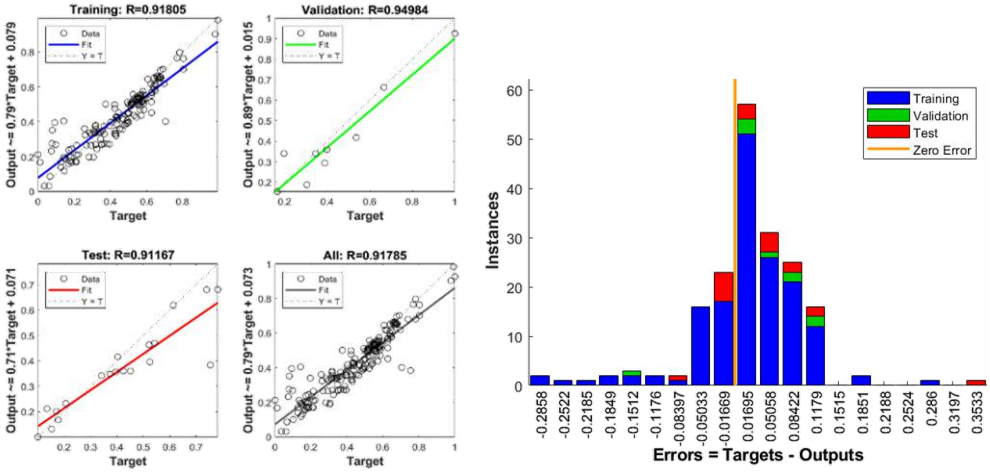

Figure B5.72 Regression coefficient and error histogram for model C+F(F)_85_5_10-33

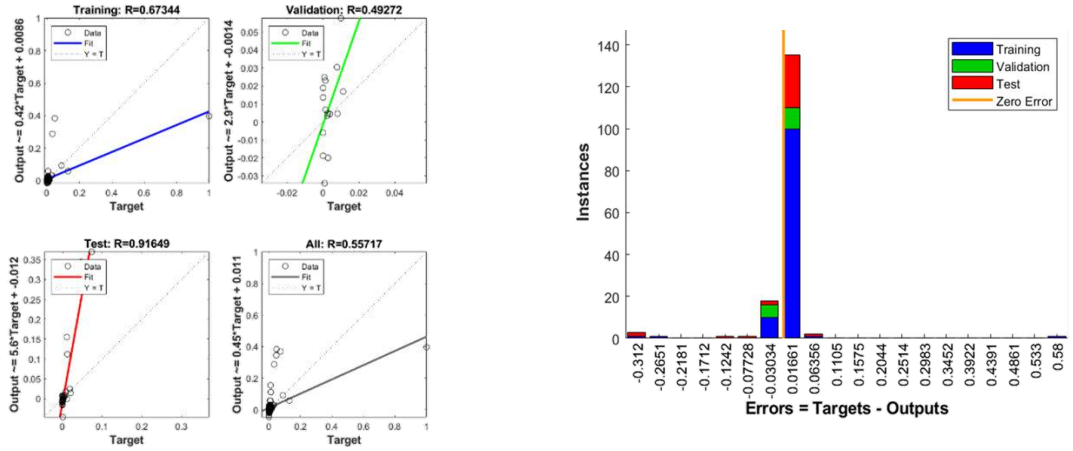

Figure B5.73 Regression coefficient and error histogram for model R-RES_70_10_20-18

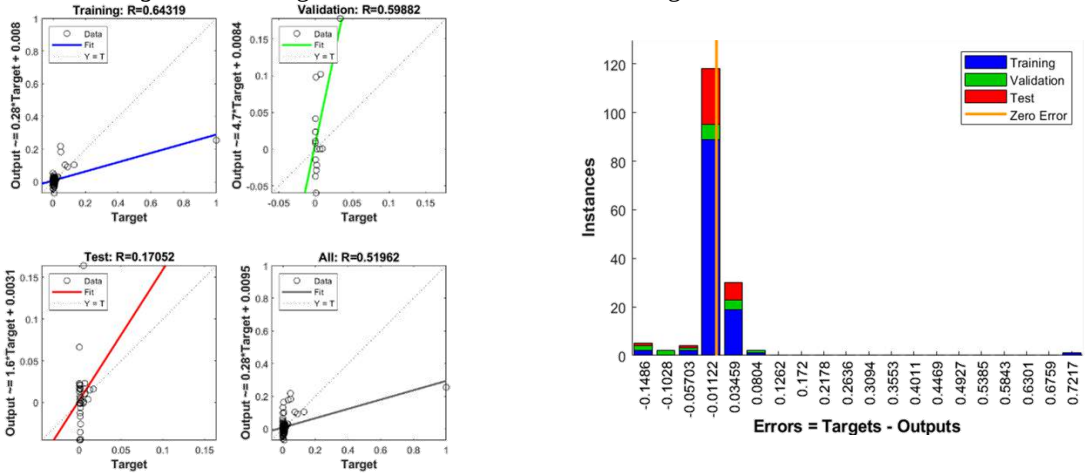

Figure B5.74 Regression coefficient and error histogram for model R-RES_70_10_20-37

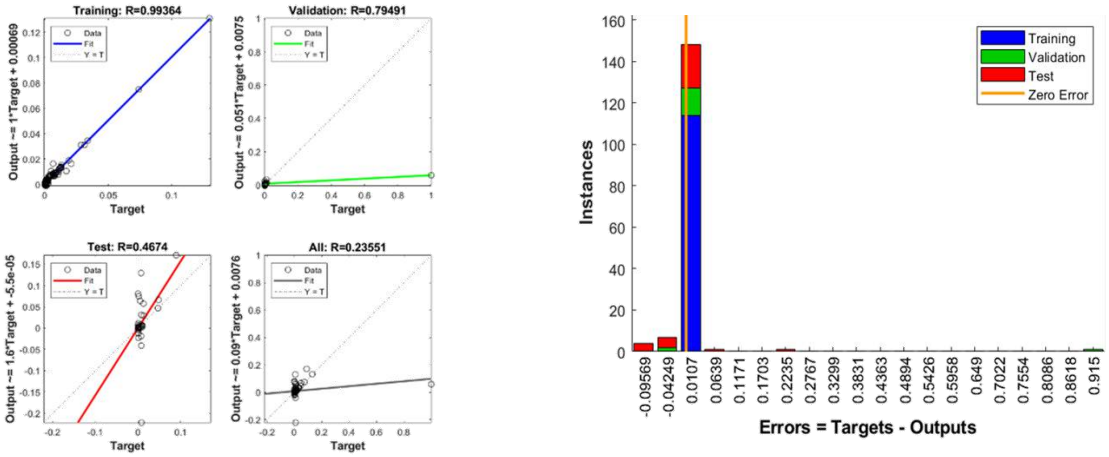

Figure B5.75 Regression coefficient and error histogram for model R-RES_70_10_20-54

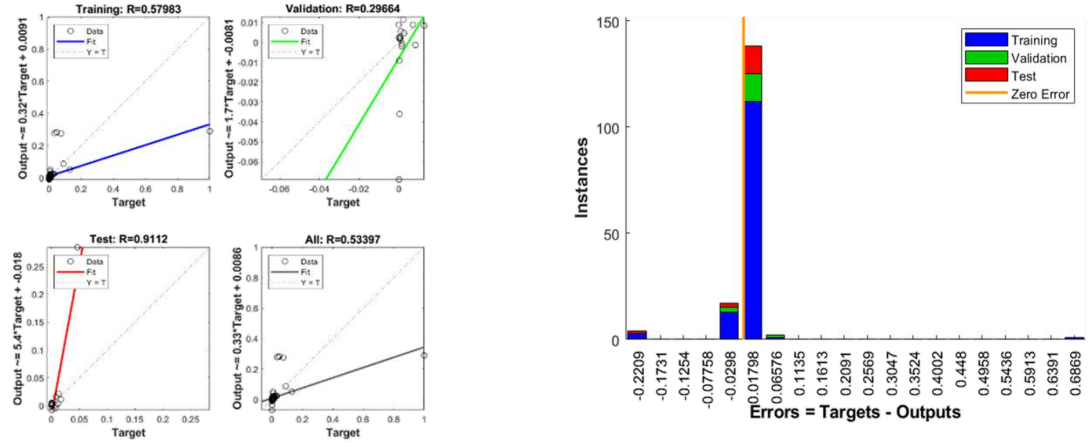

Figure B5.76 Regression coefficient and error histogram for model R-RES_80_10_10-18

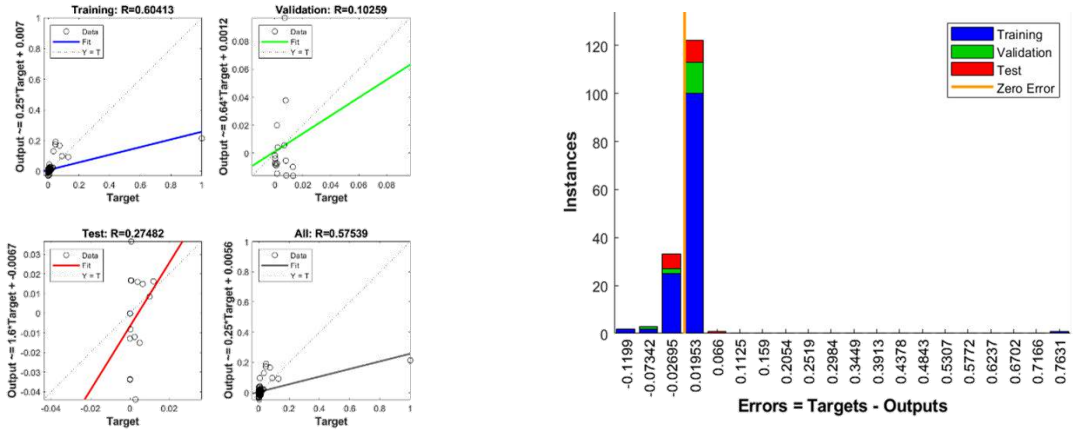

Figure B5.77 Regression coefficient and error histogram for model R-RES_80_10_10-37

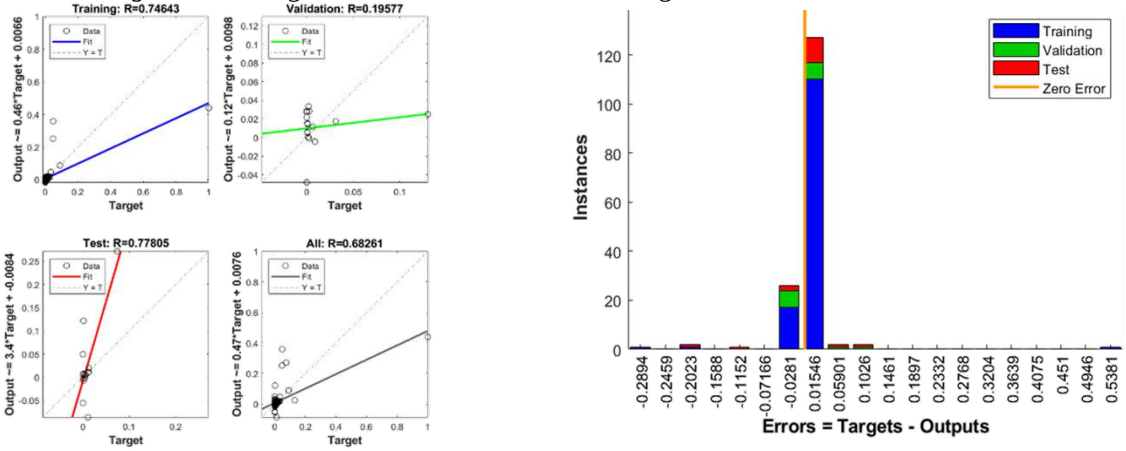

Figure B5.78 Regression coefficient and error histogram for model R-RES_80_10_10-54

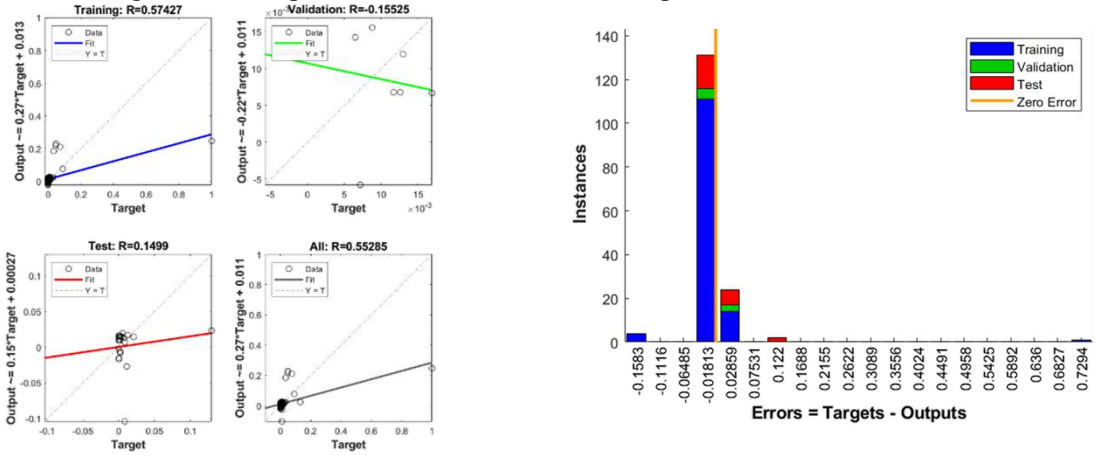

Figure B5.79 Regression coefficient and error histogram for model R-RES_80_5_15-18

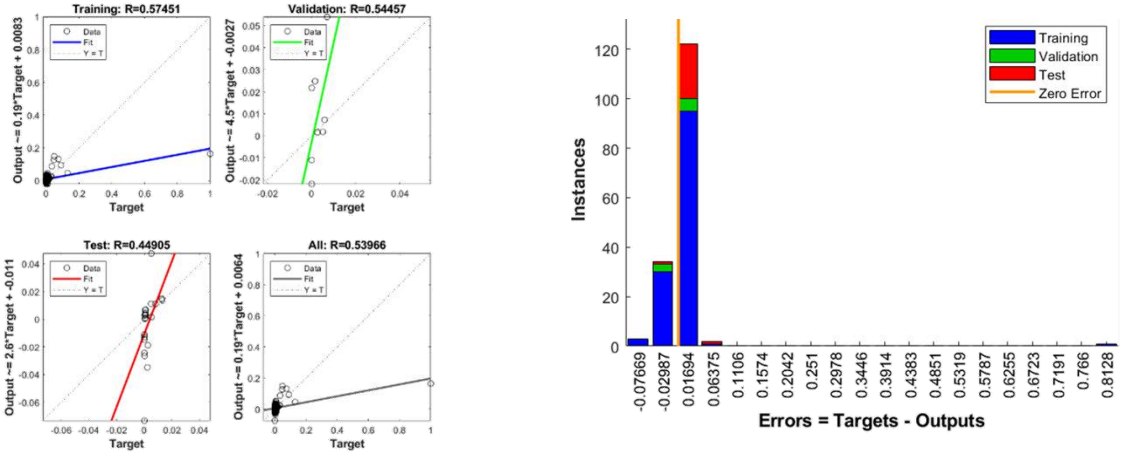

Figure B5.80 Regression coefficient and error histogram for model R-RES_80_5_15-37

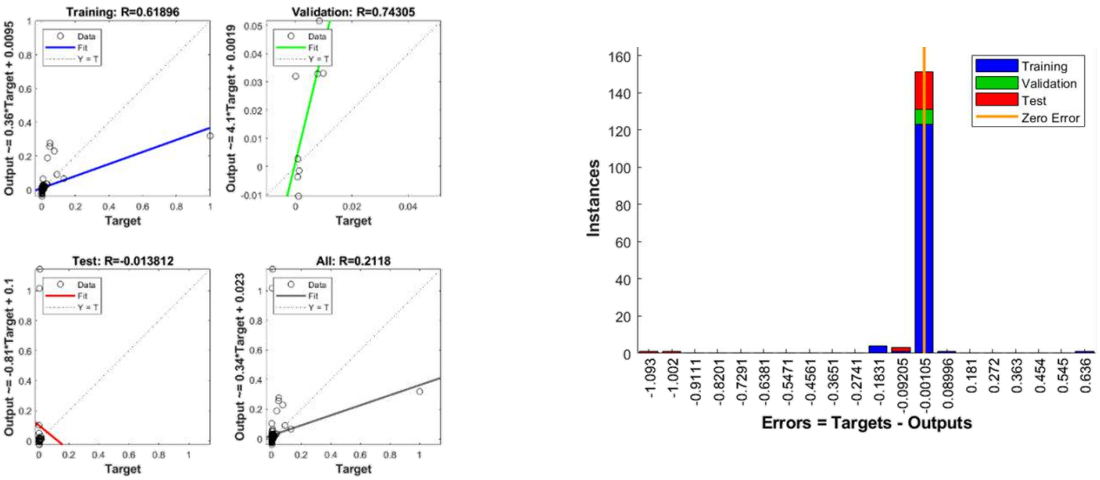

Figure B5.81 Regression coefficient and error histogram for model R-RES_80_5_15-54

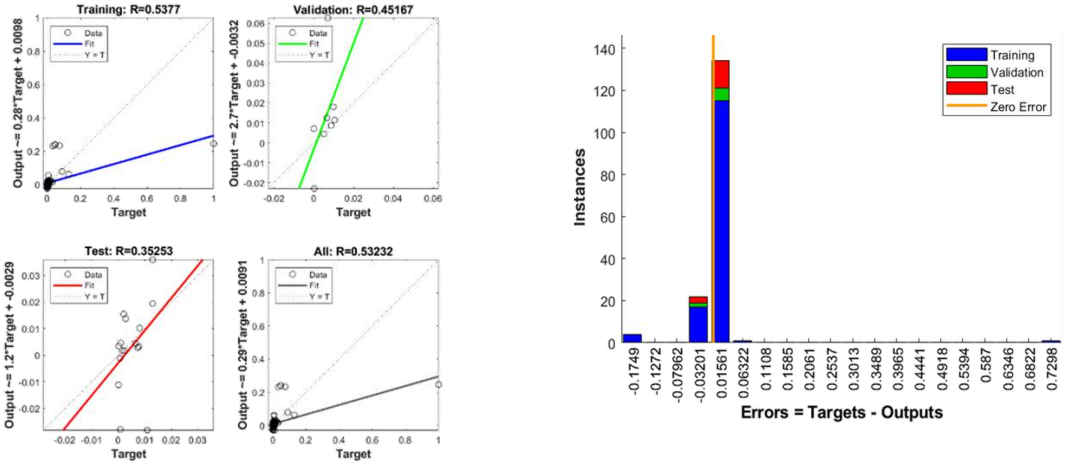

Figure B5.82 Regression coefficient and error histogram for model R-RES_85_5_10-18

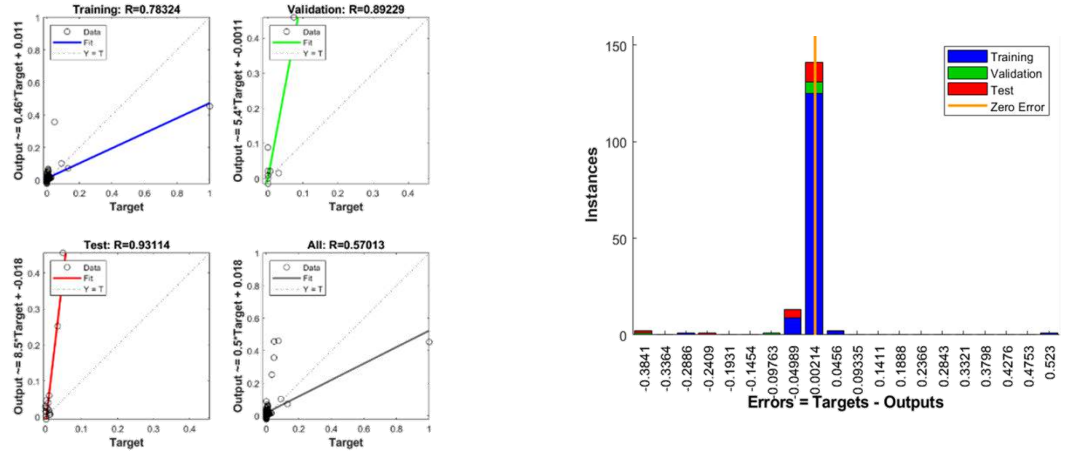

Figure B5.83 Regression coefficient and error histogram for model R-RES_85_5_10-37

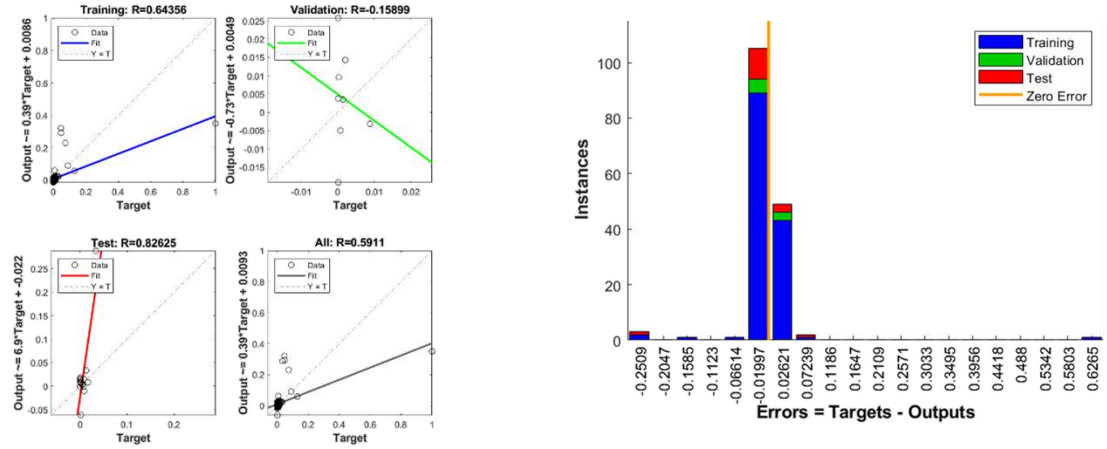

Figure B5.84 Regression coefficient and error histogram for model R-RES_85_5_10-54

Table B5.1 Results for prescribed models based on datasets from Group I

#	Model	Regression coefficient - training	Regression coefficient - validation	Regression coefficient - testing	Regression coefficient - total	Mean squared error	Epoch
1	COMP_70_10_20-20	0.96343	0.91117	0.93691	0.95267	0.0041683	11
2	COMP_70_10_20-41	0.9764	0.95823	0.95837	0.9688	0.0035684	10
3	COMP_70_10_20-60	0.96892	0.92014	0.97275	0.96502	0.0027543	11
4	COMP_80_10_10-20	0.98057	0.80865	0.96564	0.96367	0.0074847	12
5	COMP_80_10_10-41	0.98506	0.97668	0.95219	0.98091	0.00166	23
6	COMP_80_10_10-60	0.99134	0.92773	0.96242	0.9791	0.0058959	29
7	COMP_80_5_15-20	0.99243	0.96302	0.93571	0.96256	0.0026369	32
8	COMP_80_5_15-41	0.94902	0.84651	0.90042	0.93784	0.0065029	8
9	COMP_80_5_15-60	0.9734	0.96289	0.9181	0.96813	0.0020171	9
10	COMP_85_5_10-20	0.97739	0.96833	0.925	0.97202	0.0020394	27
11	COMP_85_5_10-41	0.98662	0.97242	0.91848	0.97858	0.0008891	24
12	COMP_85_5_10-60	0.97492	0.97925	0.96085	0.97274	0.0017733	11
13	FLEX_70_10_20-16	0.92275	0.93164	0.89117	0.91543	0.0052991	15
14	FLEX_70_10_20-33	0.90767	0.76191	0.88383	0.89097	0.011561	9
15	FLEX_70_10_20-48	0.97482	0.86785	0.76975	0.92254	0.011327	24
16	FLEX_80_10_10-16	0.87989	0.9049	0.89932	0.87775	0.015987	9
17	FLEX_80_10_10-33	0.90666	0.78076	0.91404	0.89732	0.012209	9
18	FLEX_80_10_10-48	0.95267	0.85083	0.66631	0.90198	0.0085164	23
19	FLEX_80_5_15-16	0.93545	0.87768	0.90633	0.92508	0.016499	20
20	FLEX_80_5_15-33	0.89835	0.5976	0.74502	0.86385	0.03847	8
21	FLEX_80_5_15-48	0.92223	0.95752	0.741	0.87383	0.0042048	10
22	FLEX_85_5_10-16	0.95091	0.98268	0.86206	0.94388	0.0020087	32
23	FLEX_85_5_10-33	0.94225	0.87925	0.92333	0.93602	0.014196	18
24	FLEX_85_5_10-48	0.93335	0.86572	0.71228	0.91121	0.0039731	10
25	RES_70_10_20-17	0.5818	0.49059	0.6872	0.56728	0.00032702	14
26	RES_70_10_20-35	0.6475	0.53495	0.38105	0.51622	0.0013192	11
27	RES_70_10_20-51	0.64343	0.44434	0.48697	0.45509	0.0016305	9
28	RES_80_10_10-17	0.70888	0.60544	0.55122	0.40192	0.040419	9
29	RES_80_10_10-35	0.91682	0.97327	0.2134	0.28895	0.000021093	12
30	RES_80_10_10-51	0.83741	0.52461	0.001682	0.68019	0.0060926	23
31	RES_80_5_15-17	0.96313	0.65467	0.78845	0.41224	0.00005	10
32	RES_80_5_15-35	0.64482	0.87646	0.42918	0.52067	0.00016986	11
33	RES_80_5_15-51	0.65712	0.70799	0.59939	0.50021	0.012333	8
34	RES_85_5_10-17	0.57762	0.92076	0.78307	0.54735	0.00013974	10
35	RES_85_5_10-35	0.5876	0.61604	0.10975	0.56962	0.00009043	11
36	RES_85_5_10-51	0.66185	0.95774	0.80715	0.60146	0.00002876	11
37	C+F_70_10_20-11	0.90648	0.69973	0.78576	0.86913	0.016046	10
38	C+F_70_10_20-23	0.92494	0.72127	0.90038	0.90129	0.021428	12
39	C+F_70_10_20-33	0.95484	0.91919	0.76254	0.88072	0.0065711	18
40	C+F_80_10_10-11	0.96269	0.89552	0.83256	0.93468	0.01262	27
41	C+F_80_10_10-23	0.96423	0.89838	0.8659	0.95102	0.0088218	21
42	C+F_80_10_10-33	0.94185	0.61875	0.48269	0.83489	0.042762	16
43	C+F_80_5_15-11	0.94032	0.97165	0.93642	0.94066	0.0043099	19
44	C+F_80_5_15-23	0.94552	0.93936	0.90559	0.93937	0.0070353	16
45	C+F_80_5_15-33	0.95811	0.97166	0.89735	0.95118	0.0030363	12
46	C+F_85_5_10-11	0.85493	0.7315	0.79043	0.83851	0.021476	10
47	C+F_85_5_10-23	0.91374	0.80006	0.51481	0.88078	0.020807	10
48	C+F_85_5_10-33	0.93165	0.89101	0.7667	0.90683	0.0068863	10

49	C+F(C)_70_10_20-11	0.94306	0.88933	0.79261	0.90407	0.006382	16
50	C+F(C)_70_10_20-23	0.99035	0.93642	0.91792	0.97062	0.001096	36
51	C+F(C)_70_10_20-33	0.99088	0.92069	0.53997	0.83021	0.001047	21
52	C+F(C)_80_10_10-11	0.8804	0.96462	0.92023	0.89466	0.01221	12
53	C+F(C)_80_10_10-23	0.98931	0.97563	0.85569	0.97368	0.0012175	41
54	C+F(C)_80_10_10-33	0.99117	0.94651	0.8712	0.97231	0.000967	40
55	C+F(C)_80_5_15-11	0.91441	0.86477	0.76372	0.8765	0.009125	14
56	C+F(C)_80_5_15-23	0.98657	0.8777	0.79109	0.94961	0.001538	25
57	C+F(C)_80_5_15-33	0.92851	0.85586	0.91949	0.91782	0.007535	9
58	C+F(C)_85_5_10-11	0.94219	0.95031	0.6253	0.88351	0.0061	20
59	C+F(C)_85_5_10-23	0.98928	0.98212	0.80141	0.94613	0.001173	28
60	C+F(C)_85_5_10-33	0.98615	0.97294	0.73419	0.97554	0.001657	19
61	C+F(F)_70_10_20-11	0.95316	0.88552	0.77722	0.9085	0.003713	21
62	C+F(F)_70_10_20-23	0.94468	0.75063	0.87348	0.91439	0.004592	14
63	C+F(F)_70_10_20-33	0.93485	0.82416	0.74891	0.89831	0.006237	10
64	C+F(F)_80_10_10-11	0.91492	0.9691	0.8446	0.90721	0.007103	17
65	C+F(F)_80_10_10-23	0.93363	0.78578	0.92823	0.92145	0.005278	11
66	C+F(F)_80_10_10-33	0.95331	0.92088	0.72288	0.92353	0.00356	13
67	C+F(F)_80_5_15-11	0.89549	0.59091	0.88892	0.87907	0.00736	10
68	C+F(F)_80_5_15-23	0.94491	0.98692	0.90541	0.93861	0.00455	27
69	C+F(F)_80_5_15-33	0.92103	0.60936	0.84939	0.87552	0.006775	8
70	C+F(F)_85_5_10-11	0.93448	0.95476	0.95327	0.93617	0.005235	21
71	C+F(F)_85_5_10-23	0.87832	0.56263	0.91745	0.87404	0.009377	8
72	C+F(F)_85_5_10-33	0.91805	0.94984	0.91167	0.91785	0.006489	9
73	R-RES_70_10_20-18	0.67344	0.49272	0.91649	0.55717	0.00041239	15
74	R-RES_70_10_20-37	0.64319	0.59882	0.17052	0.51962	0.0040962	9
75	R-RES_70_10_20-54	0.99364	0.79491	0.4674	0.23551	0.055495	11
76	R-RES_80_10_10-18	0.57983	0.29664	0.9112	0.53397	0.00040928	10
77	R-RES_80_10_10-37	0.60413	0.10259	0.27482	0.57539	0.00074849	10
78	R-RES_80_10_10-54	0.76463	0.19577	0.77805	0.68261	0.0011138	15
79	R-RES_80_5_15-18	0.57427	0.15525	0.1499	0.55285	0.00007205	9
80	R-RES_80_5_15-37	0.57451	0.54457	0.44905	0.53966	0.00047872	9
81	R-RES_80_5_15-54	0.61896	0.74305	-0.013812	0.2118	0.00052809	10
82	R-RES_85_5_10-18	0.5377	0.45167	0.35253	0.53232	0.00047318	11
83	R-RES_85_5_10-37	0.78324	0.89229	0.93224	0.57013	0.019719	11
84	R-RES_85_5_10-54	0.64356	-0.15899	0.82625	0.5911	0.00018284	10

B6. Results for scripted models – Group I

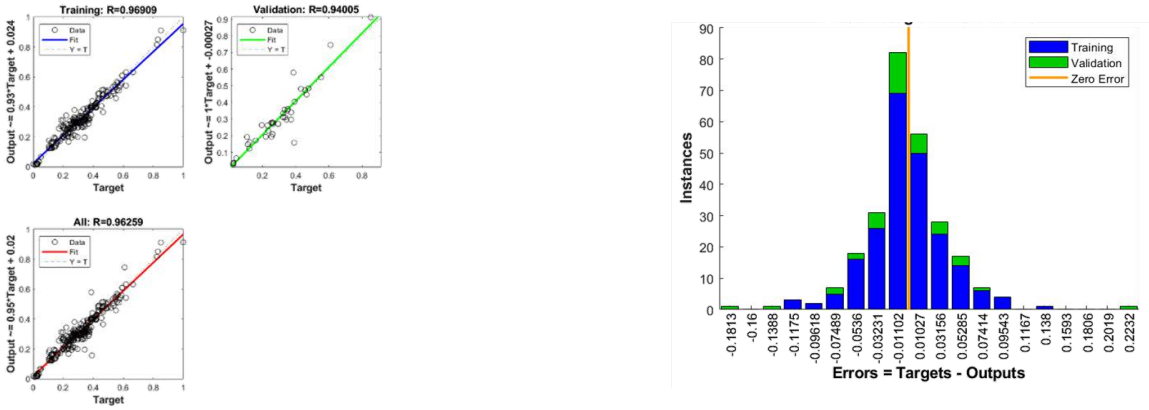

Figure B6.1 Regression coefficient and error histogram for model COMP Initial

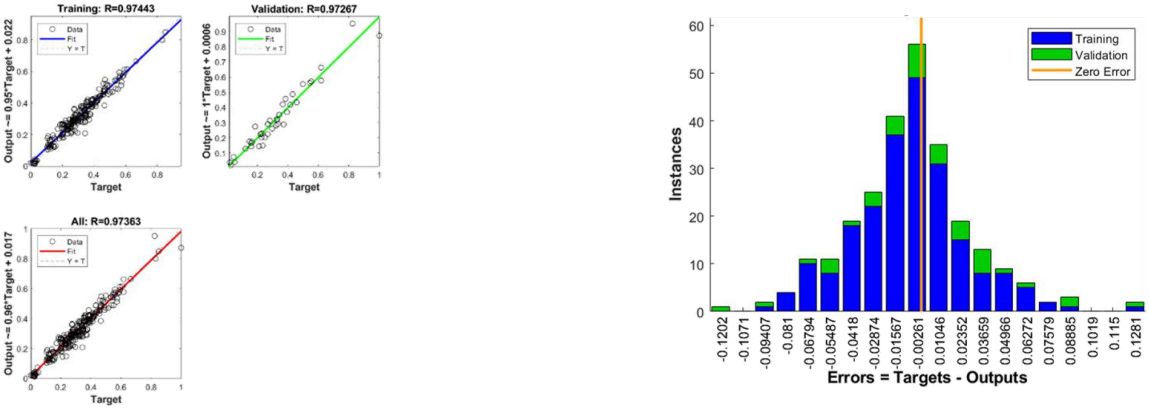

Figure B6.2 Regression coefficient and error histogram for model COMP Optimized n=25

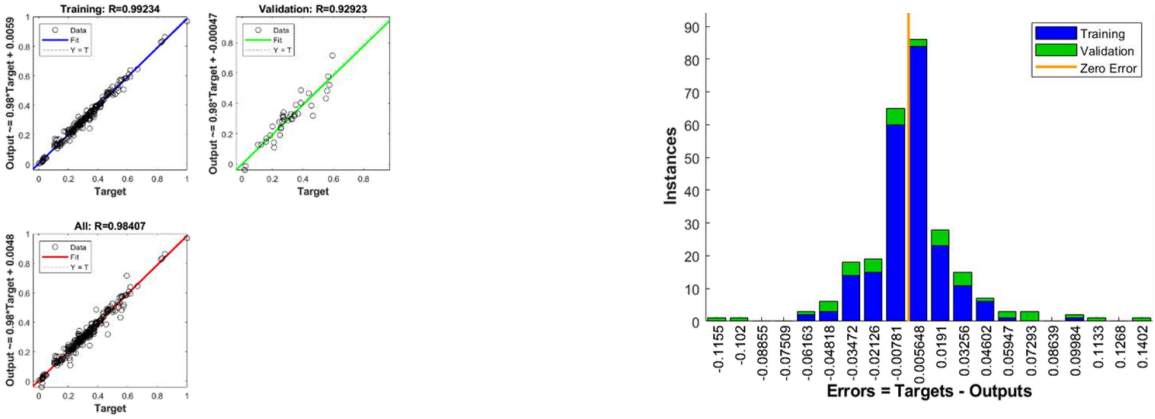

Figure B6.3 Regression coefficient and error histogram for model COMP Optimized n=31

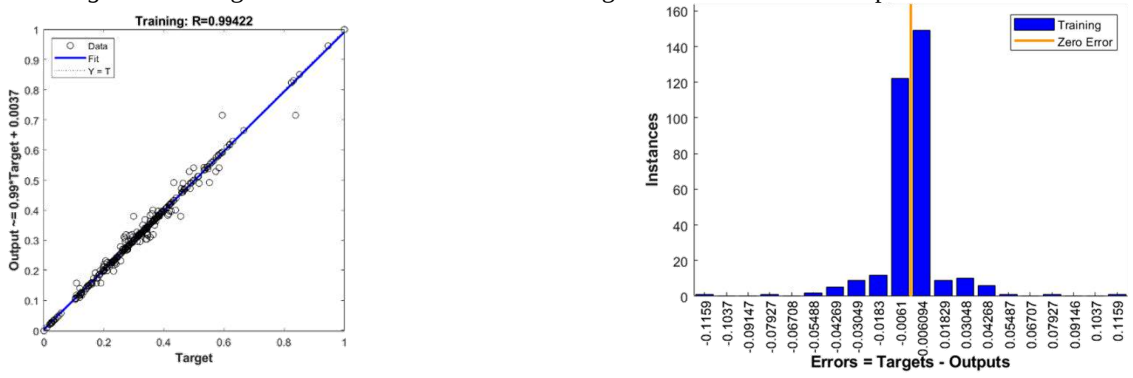

Figure B6.4 Regression coefficient and error histogram for model COMP Working

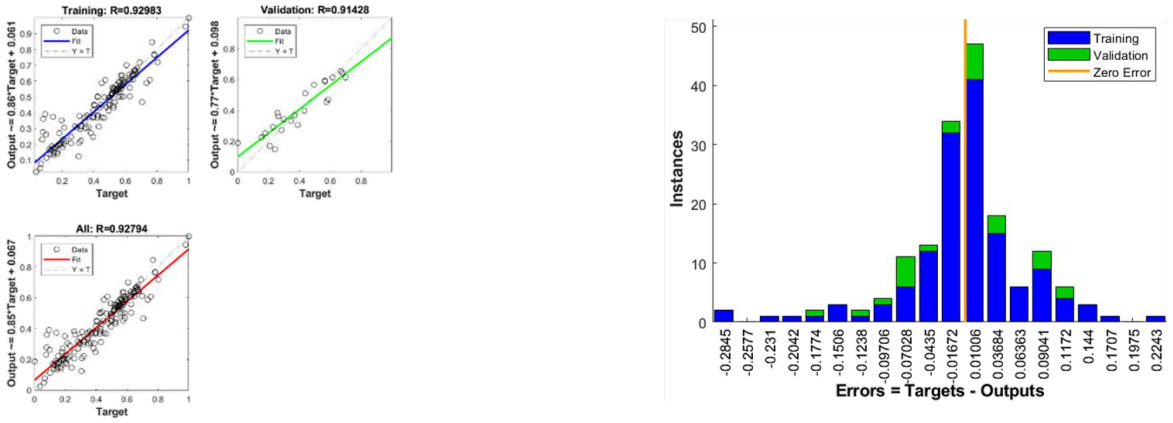

Figure B6.5 Regression coefficient and error histogram for model FLEX Initial

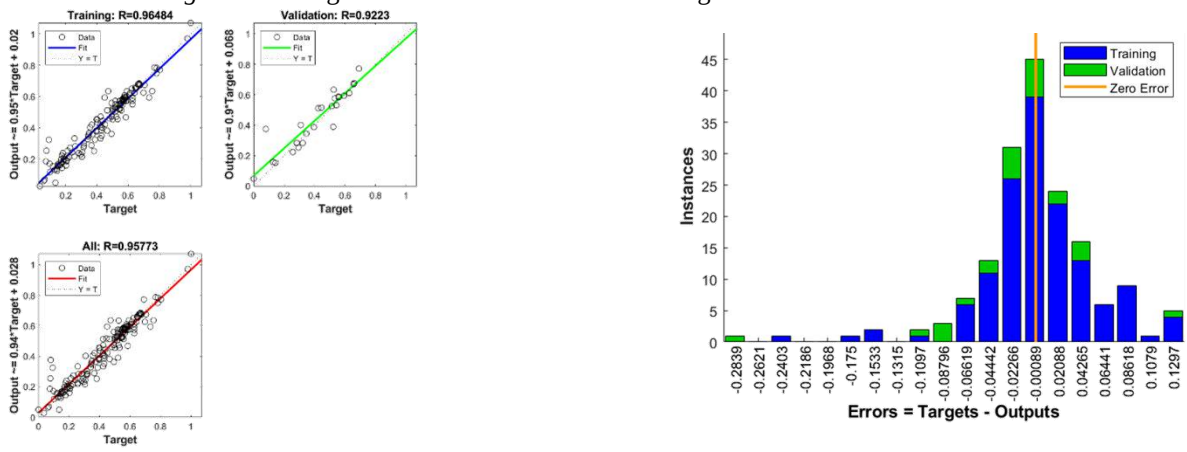

Figure B6.6 Regression coefficient and error histogram for model FLEX Optimized n-21

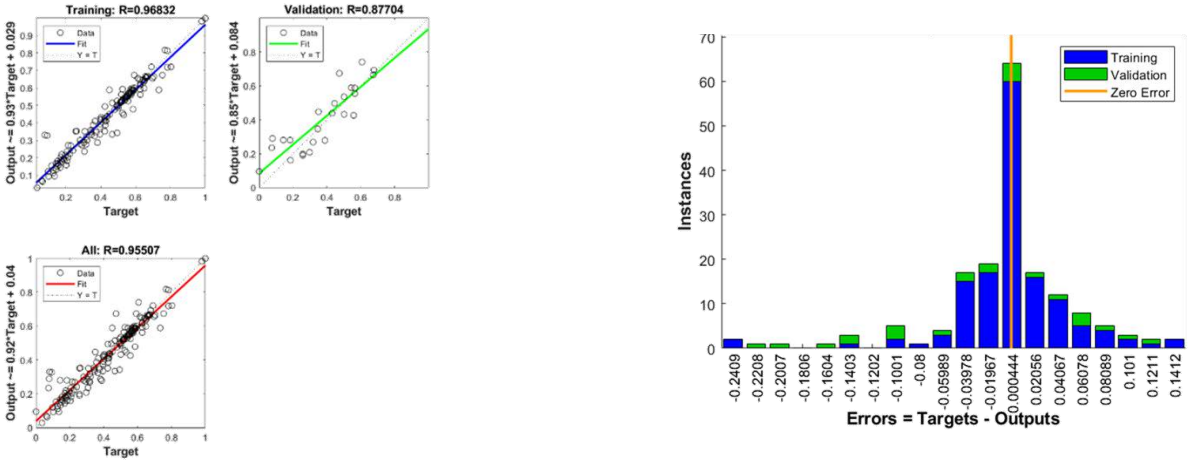

Figure B6.7 Regression coefficient and error histogram for model FLEX Optimized n=30

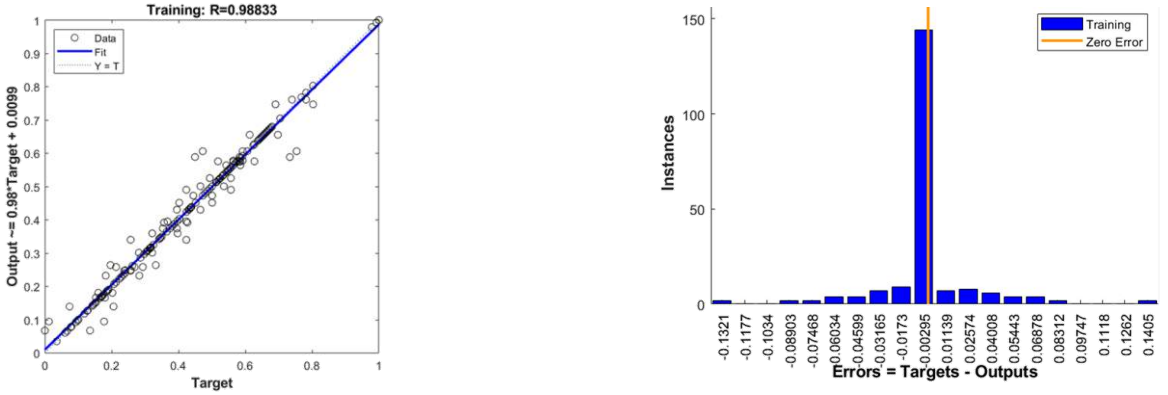

Figure B6.8 Regression coefficient and error histogram for model FLEX Working

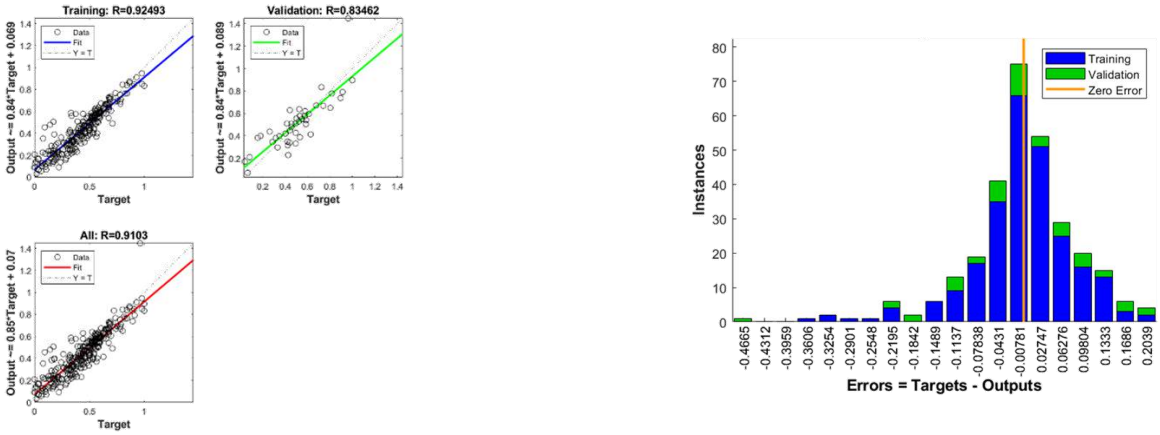

Figure B6.9 Regression coefficient and error histogram for model COMP+FLEX Initial

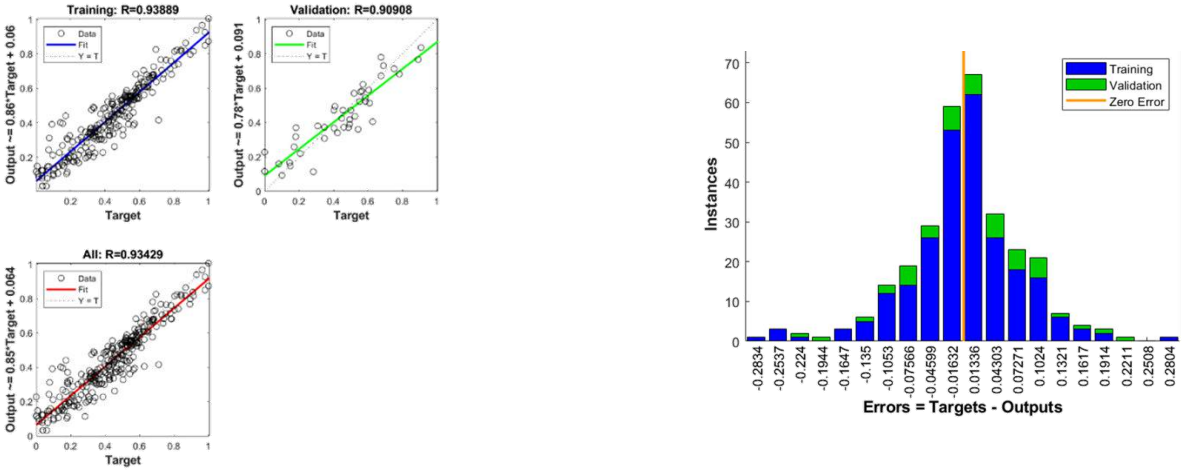

Figure B6.10 Regression coefficient and error histogram for model COMP+FLEX Optimized n=18

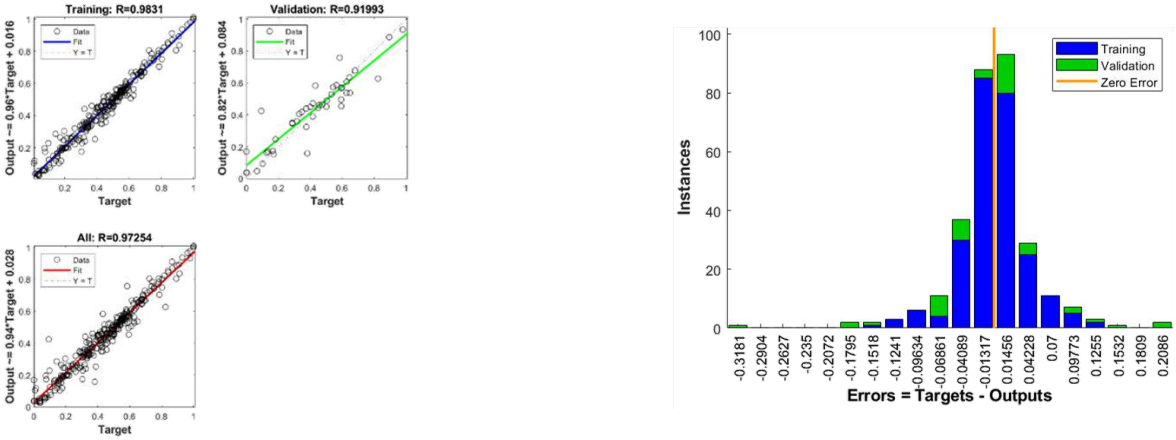

Figure B6.11 Regression coefficient and error histogram for model COMP+FLEX Optimized n=24

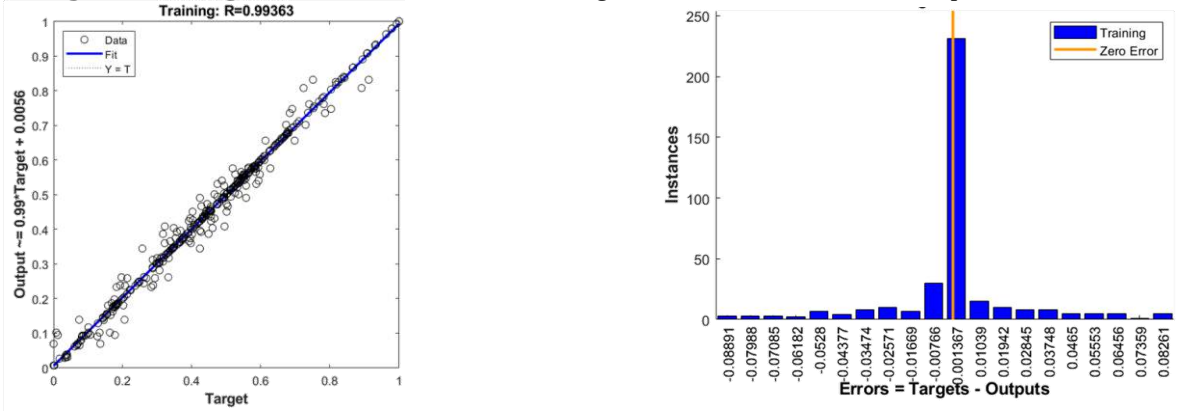

Figure B6.12 Regression coefficient and error histogram for model COMP+FLEX Working

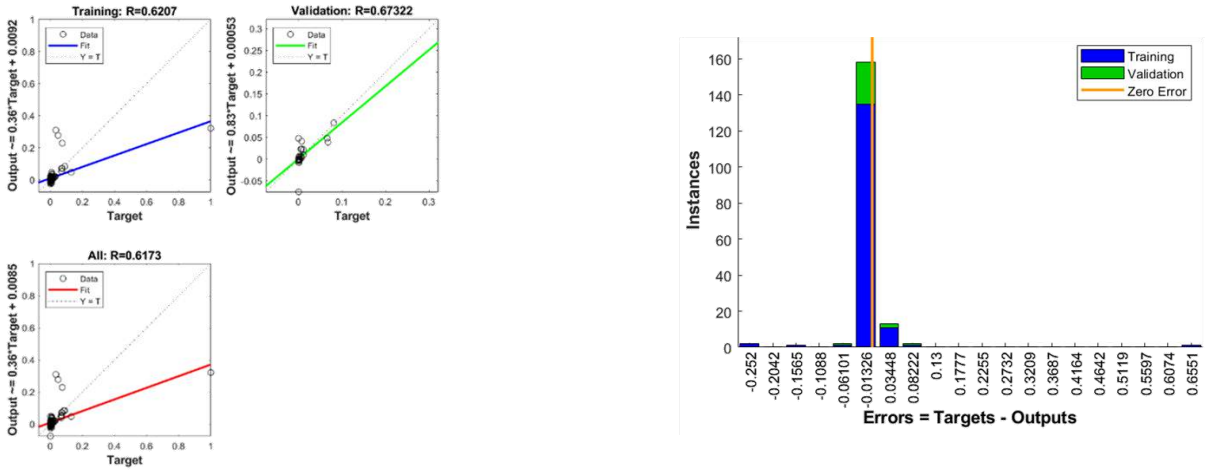

Figure B6.13 Regression coefficient and error histogram for model RESIST Initial

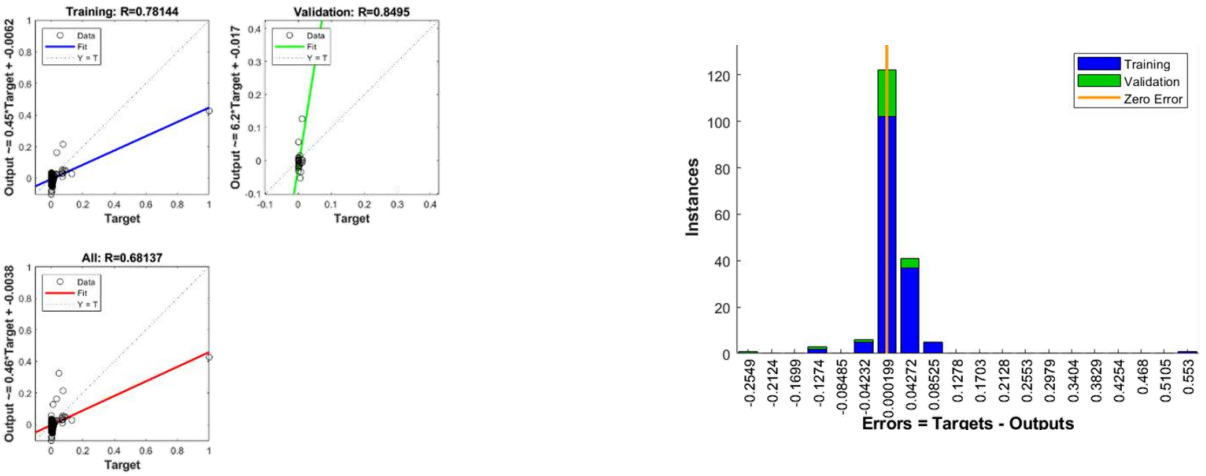

Figure B6.14 Regression coefficient and error histogram for model RESIST Optimized n=23

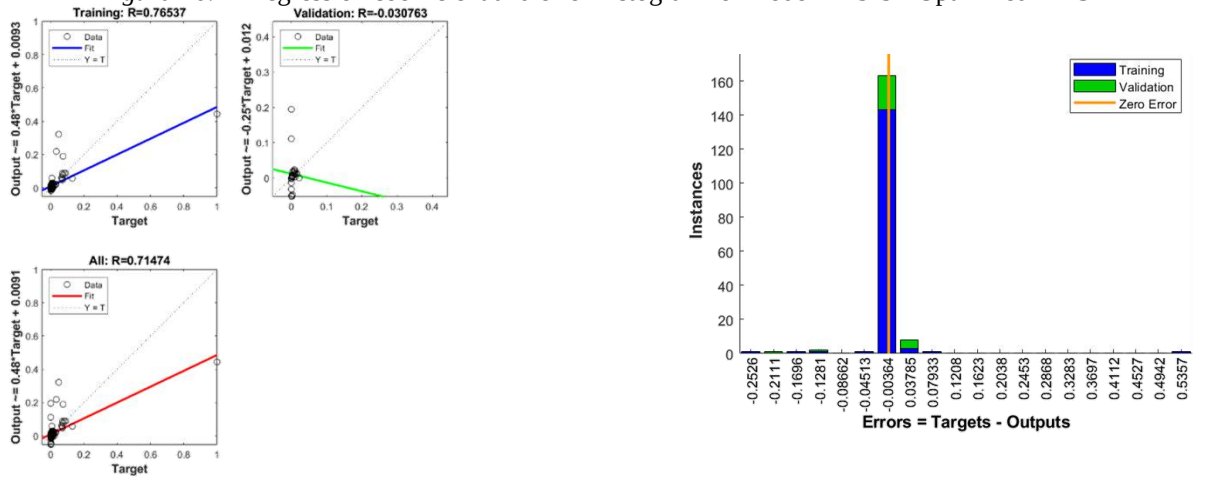

Figure B6.15 Regression coefficient and error histogram for model RESIST Optimized n=31

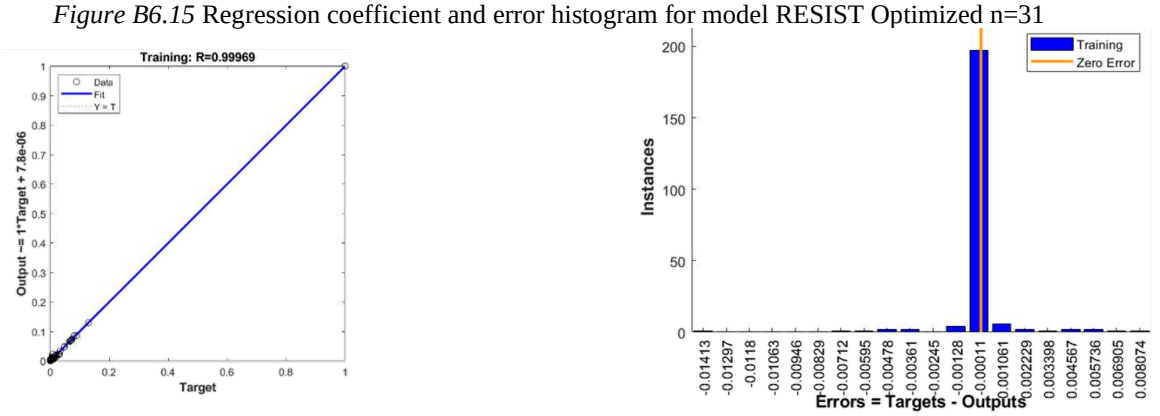

Figure B6.16 Regression coefficient and error histogram for model RESIST Working

Table B6.1 Results for scripted models based on datasets from Group I

#	Model	Regression coefficient - training	Regression coefficient - validation	Regression coefficient - total	Mean squared error - MSE	Root mean squared error - RMSE
1	COMP Initial	0.9609	0.94005	0.96259	0.0007135	0.0023
2	COMP Optimized n=25	0.97443	0.97267	0.97363	0.0012	0.0073
3	COMP Optimized n=31	0.99234	0.92923	0.98407	0.00039729	0.000019355
4	COMP Working	0.99422	/	0.99422	0.0004653	0.0001329
5	FLEX Initial	0.92983	0.91428	0.92794	0.0056	0.00043963
6	FLEX Optimized n=21	0.96484	0.9223	0.95773	0.0028	0.0029
7	FLEX Optimized n=30	0.96832	0.87704	0.95507	0.0025	0.000071645
8	FLEX Working	0.98833	/	0.98833	0.00093724	0.00065467
9	COMP+FLEX Initial	0.92493	0.83462	0.9103	0.018	0.134
10	COMP+FLEX Optimized n=18	0.93889	0.90908	0.93429	0.0986	0.2495
11	COMP+FLEX Optimized n=24	0.9831	0.91993	0.97254	0.0813	0.2851
12	COMP+FLEX Working	0.99363	/	0.99363	0.0892	0.3033
13	RESIST Initial	0.6207	0.67322	0.6173	0.0042	0.0003617
14	RESIST Optimized n=23	0.78144	0.8495	0.68137	0.0031	0.0149
15	RESIST Optimized n=31	0.76537	-0.030763	0.71474	0.003	0.0011
16	RESIST Working	0.99969	/	0.99969	0.0000028819	0.0011

B7. Results for prescribed models – Group II

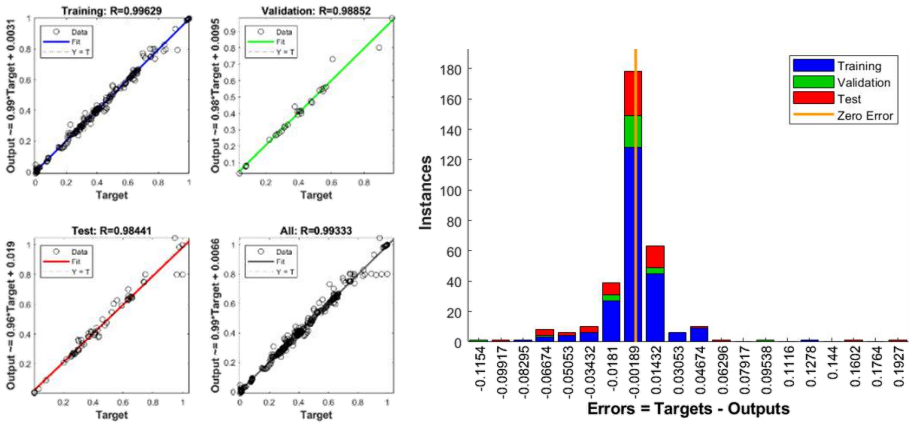

Figure B7.1 Regression coefficient and error histogram for model S_C+F_70_10_20-8

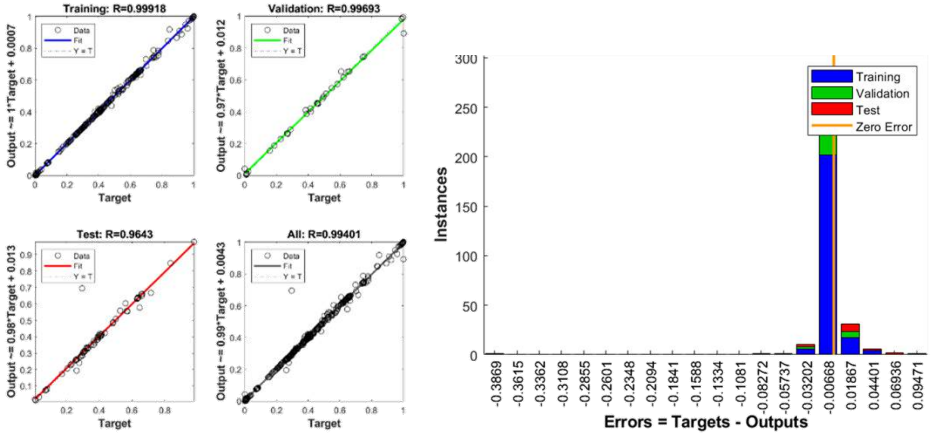

Figure B7.2 Regression coefficient and error histogram for model S_C+F_70_10_20-17

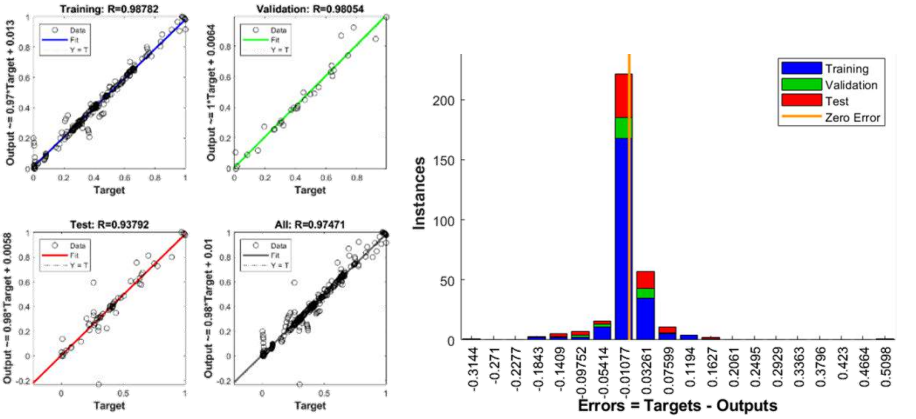

Figure B7.3 Regression coefficient and error histogram for model S_C+F_70_10_20-24

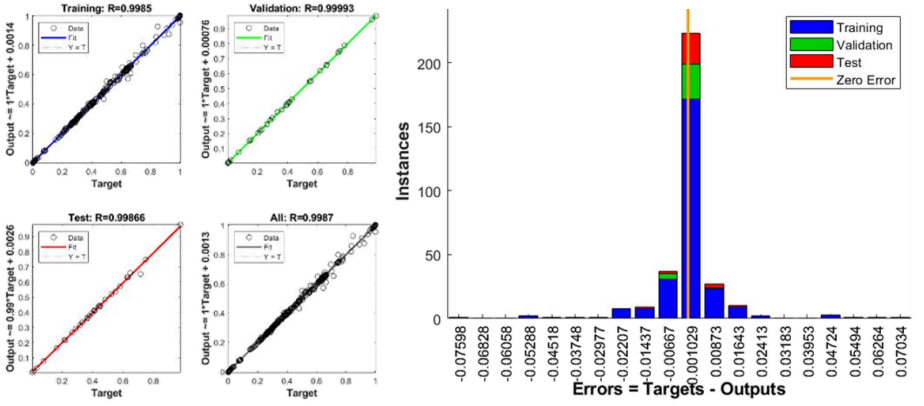

Figure B7.4 Regression coefficient and error histogram for model S_C+F_80_10_10-8

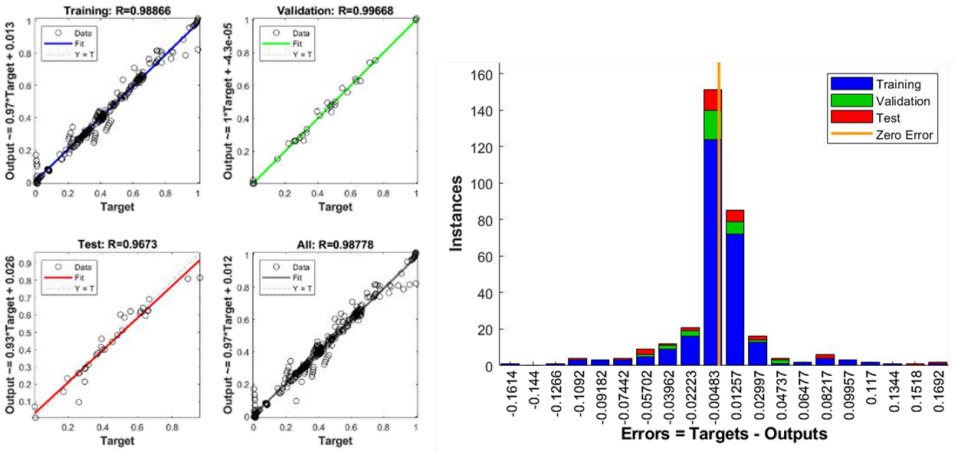

Figure B7.5 Regression coefficient and error histogram for model S_C+F_80_10_10-17

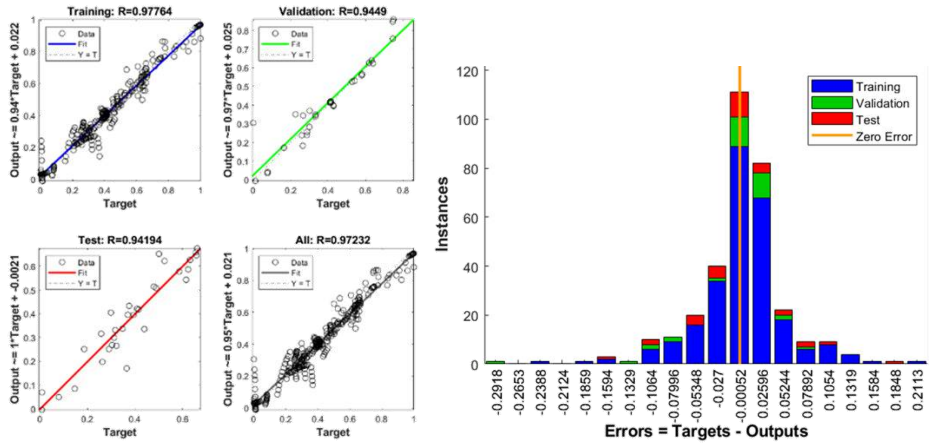

Figure B7.6 Regression coefficient and error histogram for model S_C+F_80_10_10-24

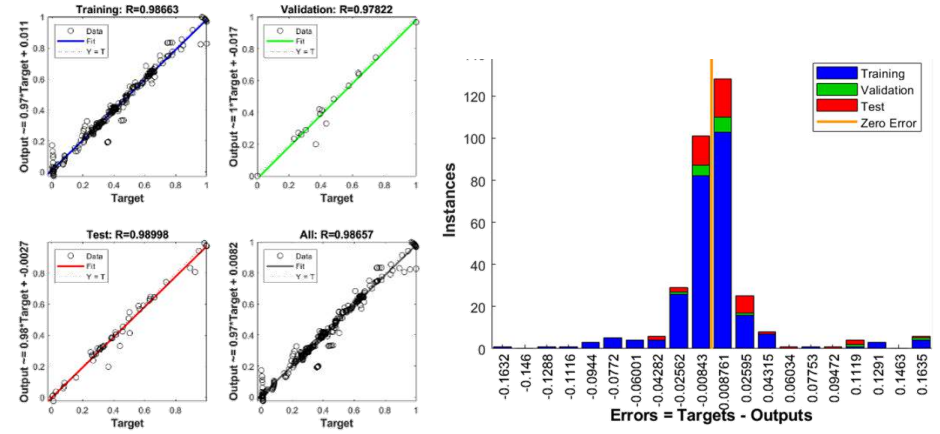

Figure B7.7 Regression coefficient and error histogram for model S_C+F_80_5_15-8

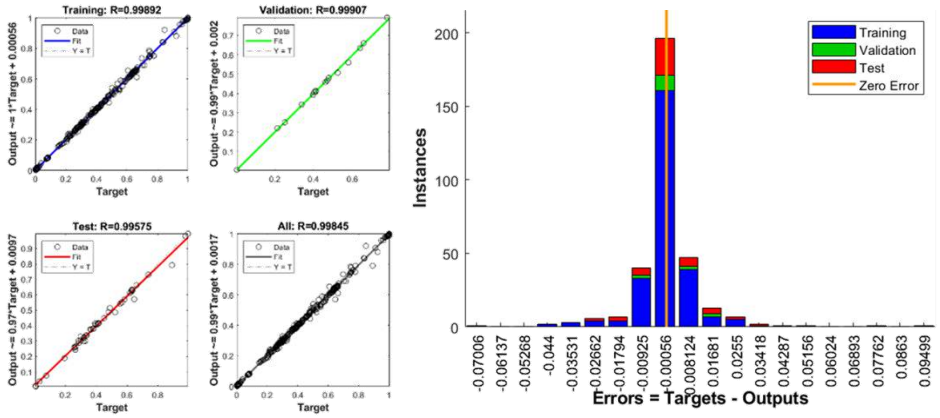

Figure B7.8 Regression coefficient and error histogram for model S_C+F_80_5_15-17

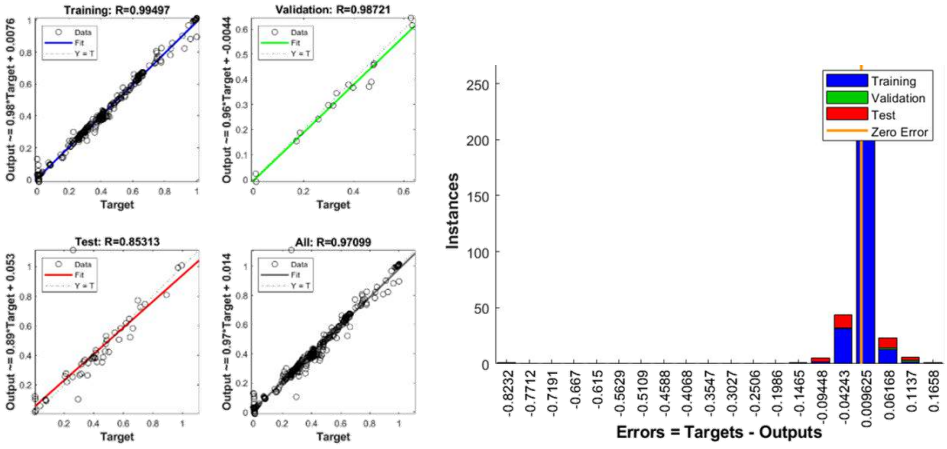

Figure B7.9 Regression coefficient and error histogram for model S_C+F_80_5_15-24

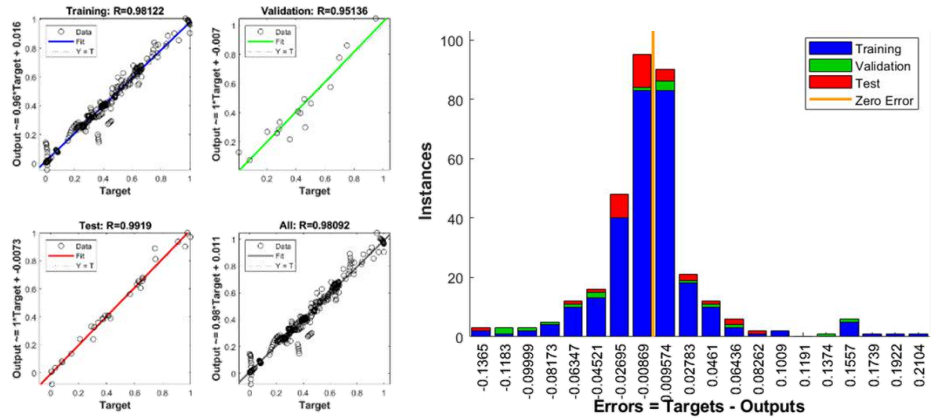

Figure B7.10 Regression coefficient and error histogram for model S_C+F_85_5_10-8

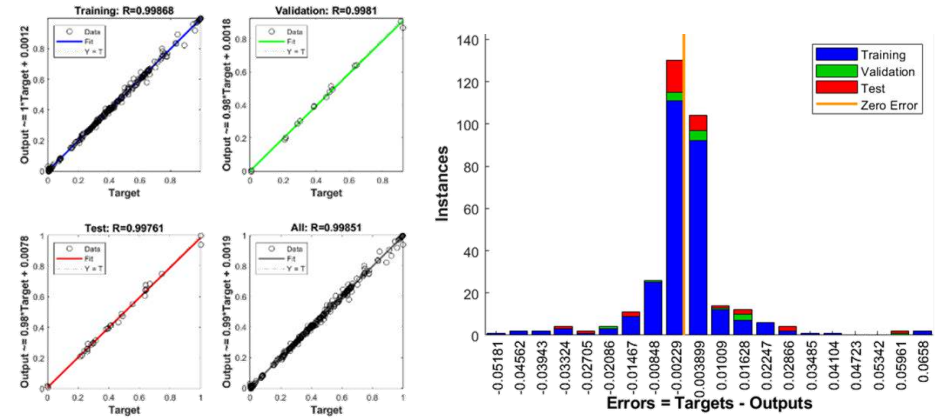

Figure B7.11 Regression coefficient and error histogram for model S_C+F_85_5_10-17

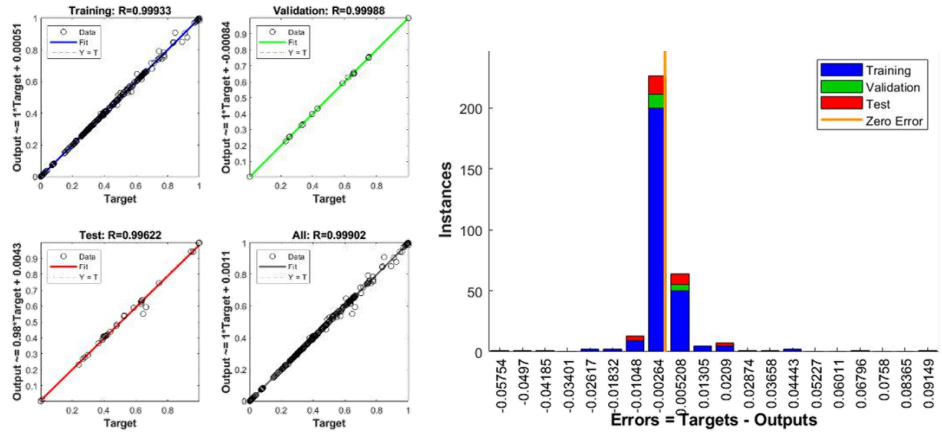

Figure B7.12 Regression coefficient and error histogram for model S_C+F_85_5_10-24

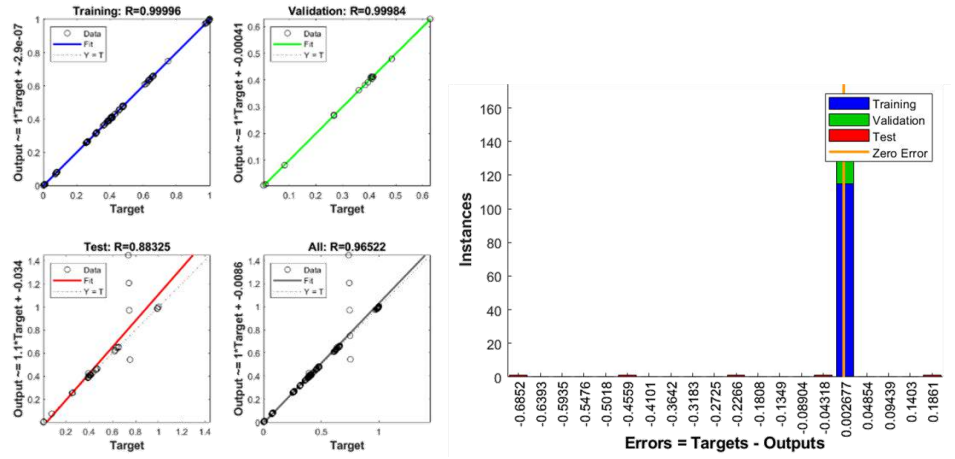

Figure B7.13 Regression coefficient and error histogram for model S_C+F(C)_70_10_20-8

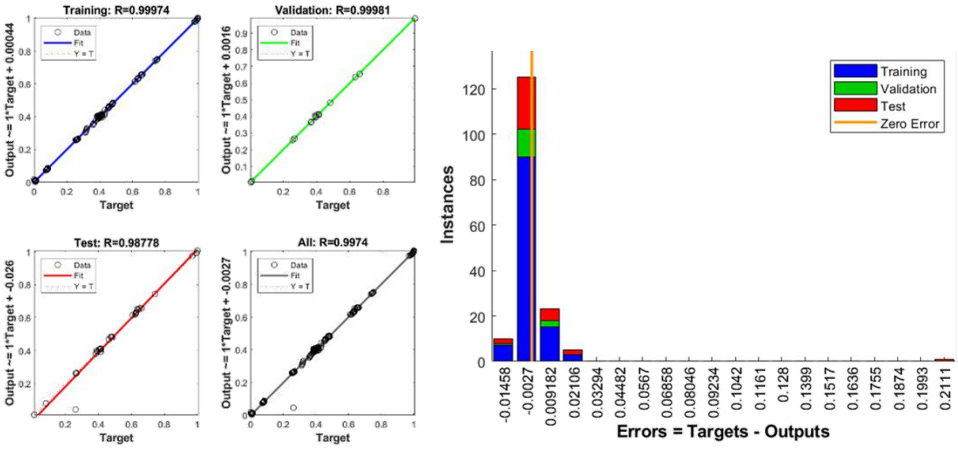

Figure B7.14 Regression coefficient and error histogram for model S_C+F(C)_70_10_20-17

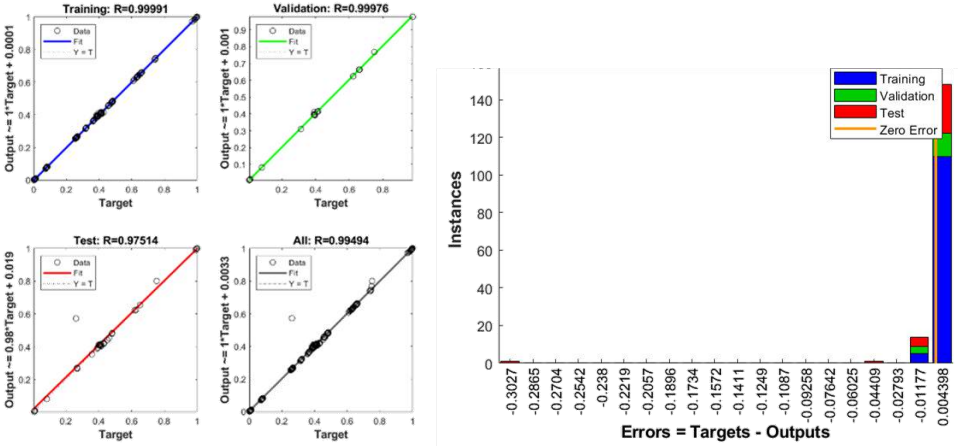

Figure B7.15 Regression coefficient and error histogram for model S_C+F(C)_70_10_20-24

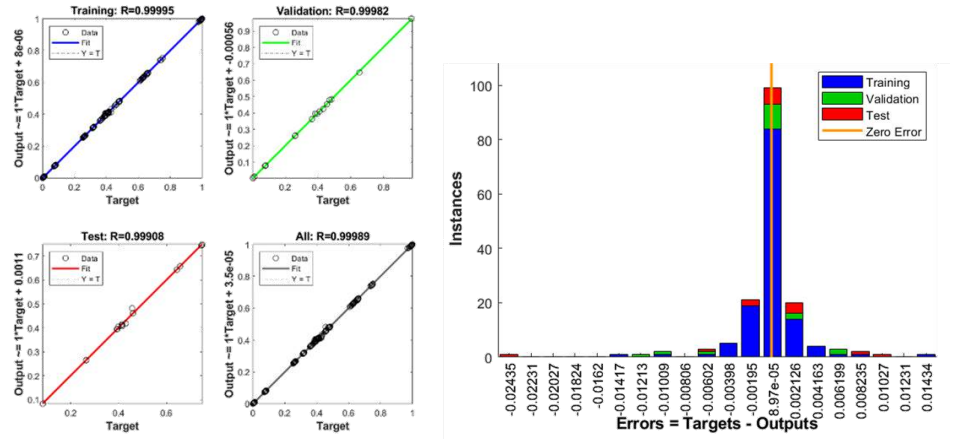

Figure B7.16 Regression coefficient and error histogram for model S_C+F(C)_80_10_10-8

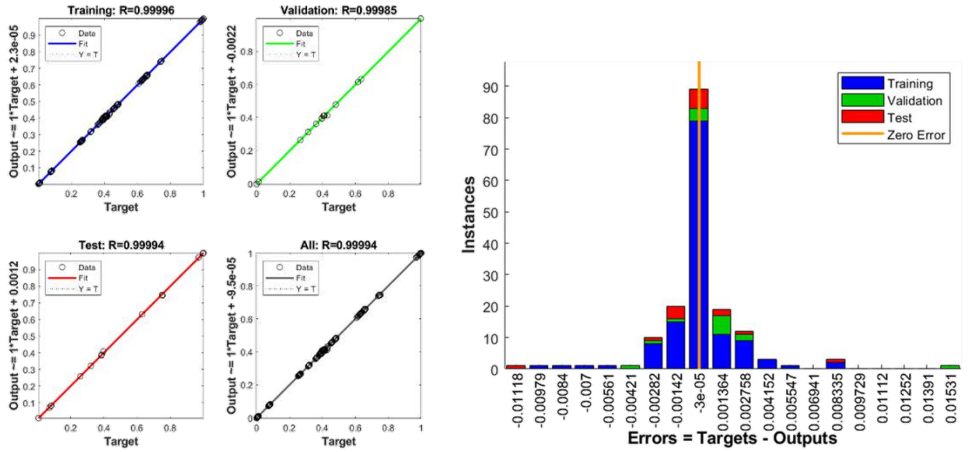

Figure B7.17 Regression coefficient and error histogram for model S_C+F(C)_80_10_10-17

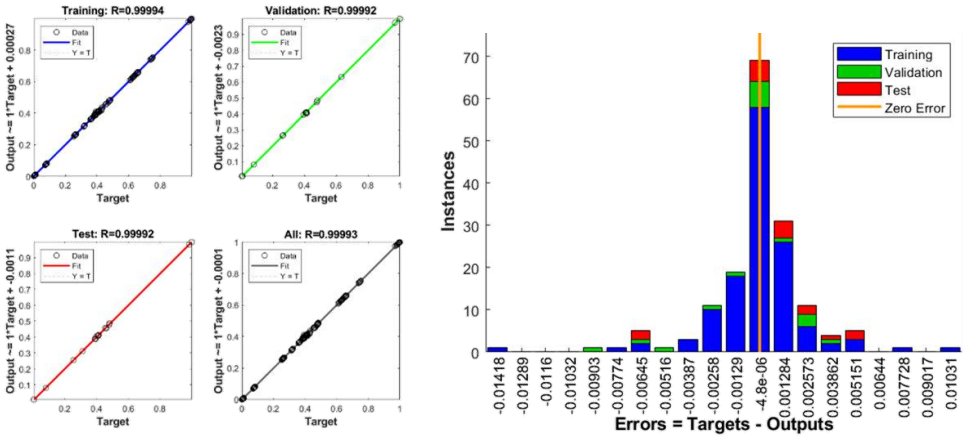

Figure B7.18 Regression coefficient and error histogram for model S_C+F(C)_80_10_10-24

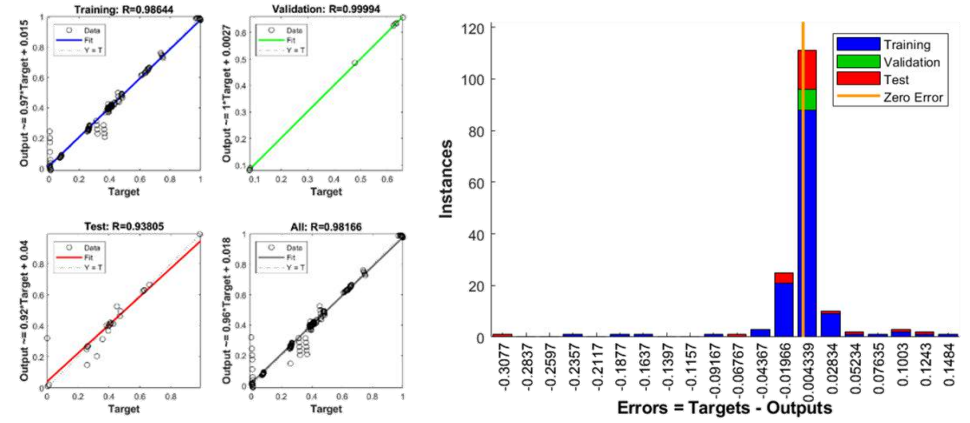

Figure B7.19 Regression coefficient and error histogram for model S_C+F(C)_80_5_15-8

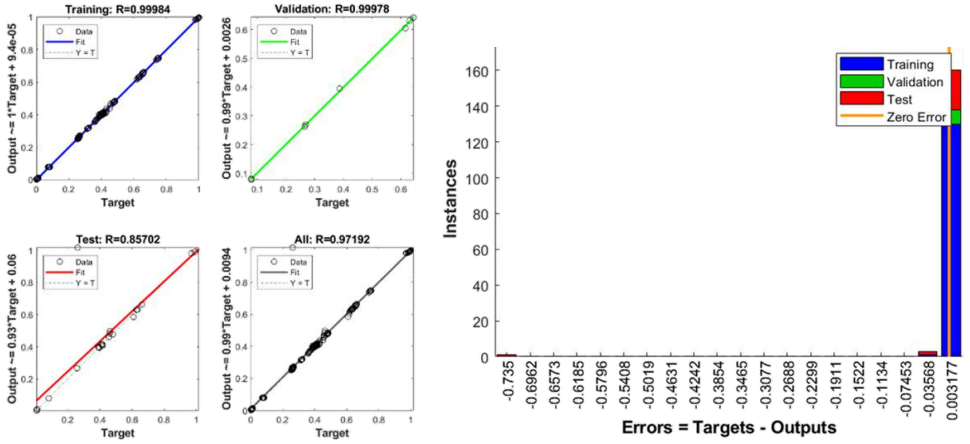

Figure B7.20 Regression coefficient and error histogram for model S_C+F(C)_80_5_15-17

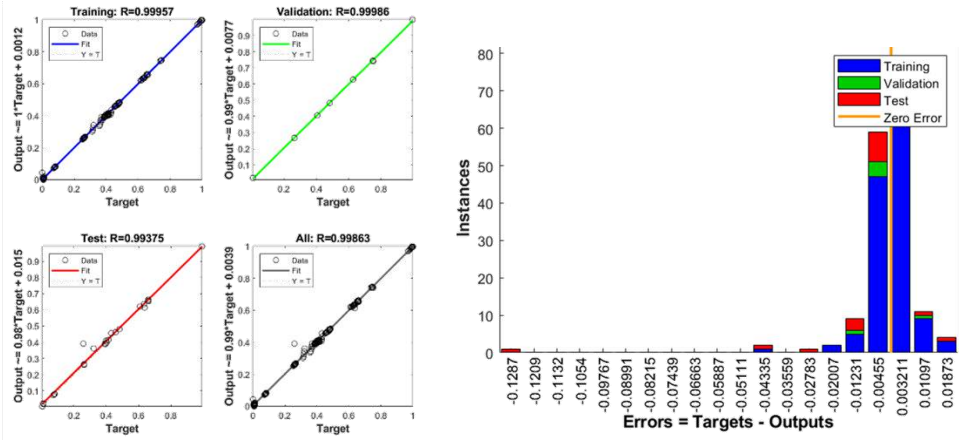

Figure B7.21 Regression coefficient and error histogram for model S_C+F(C)_80_5_15-24

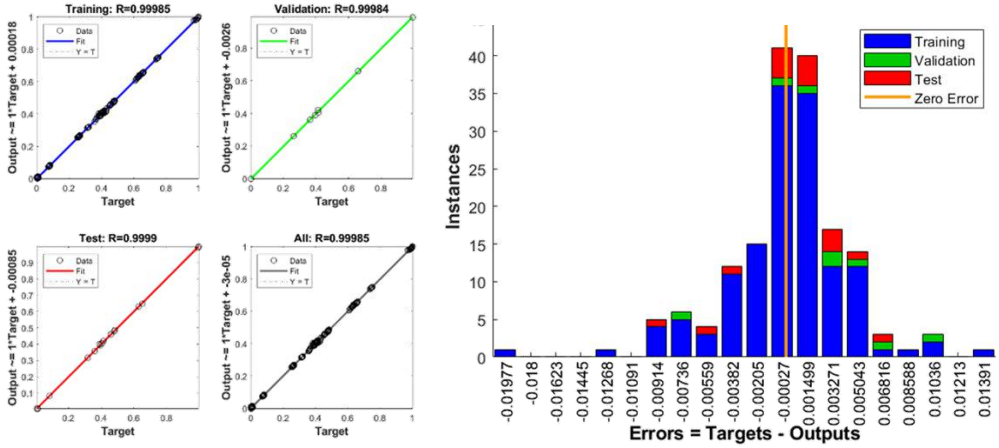

Figure B7.22 Regression coefficient and error histogram for model S_C+F(C)_85_5_10-8

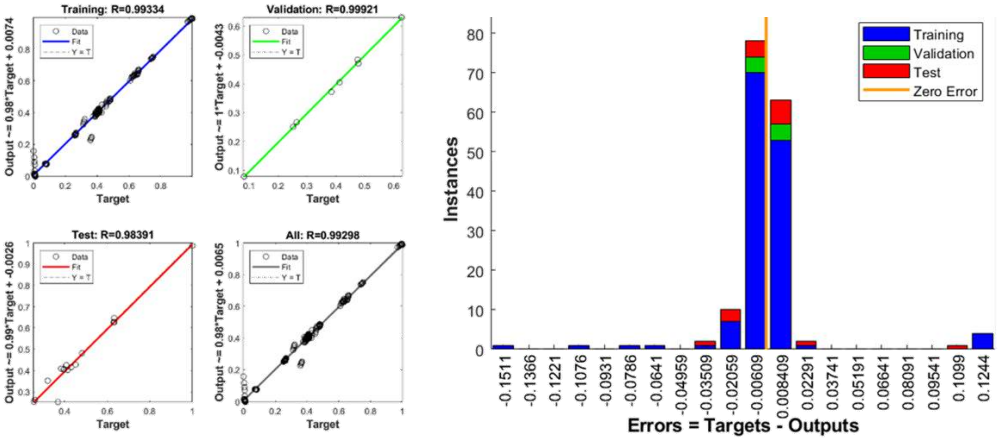

Figure B7.23 Regression coefficient and error histogram for model S_C+F(C)_85_5_10-17

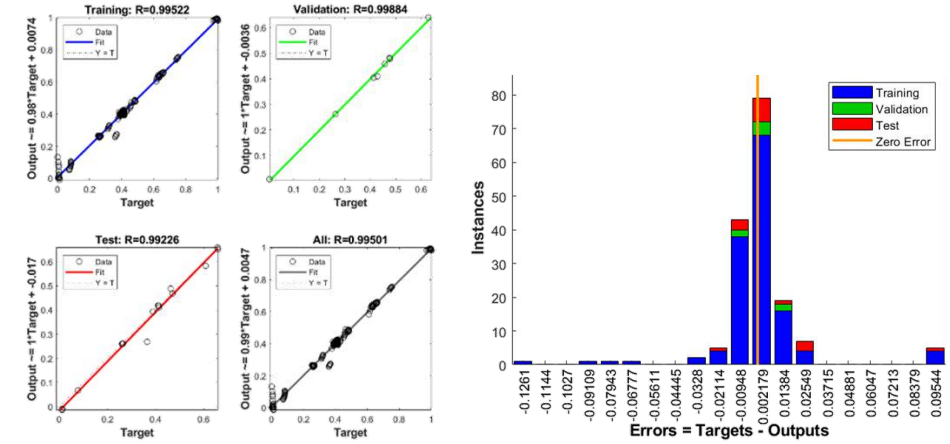

Figure B7.24 Regression coefficient and error histogram for model S_C+F(C)_85_5_10-24

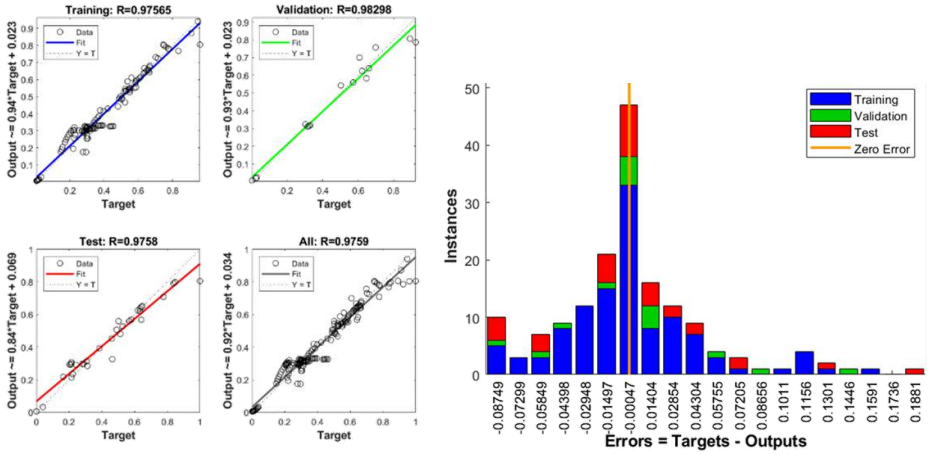

Figure B7.25 Regression coefficient and error histogram for model S_C+F(F)_70_10_20-8

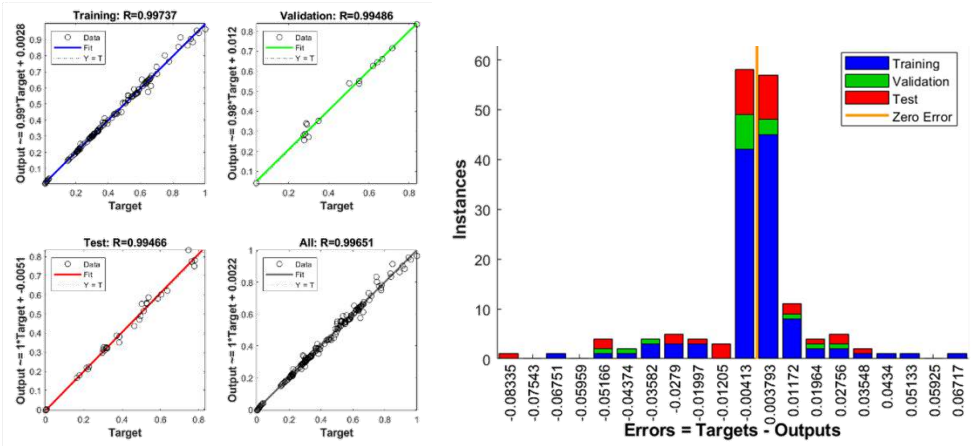

Figure B7.26 Regression coefficient and error histogram for model S_C+F(F)_70_10_20-17

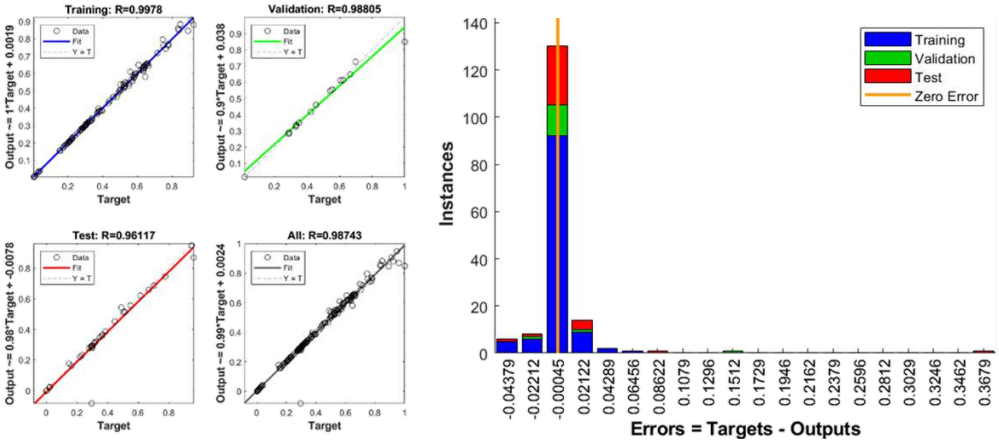

Figure B7.27 Regression coefficient and error histogram for model S_C+F(F)_70_10_20-24

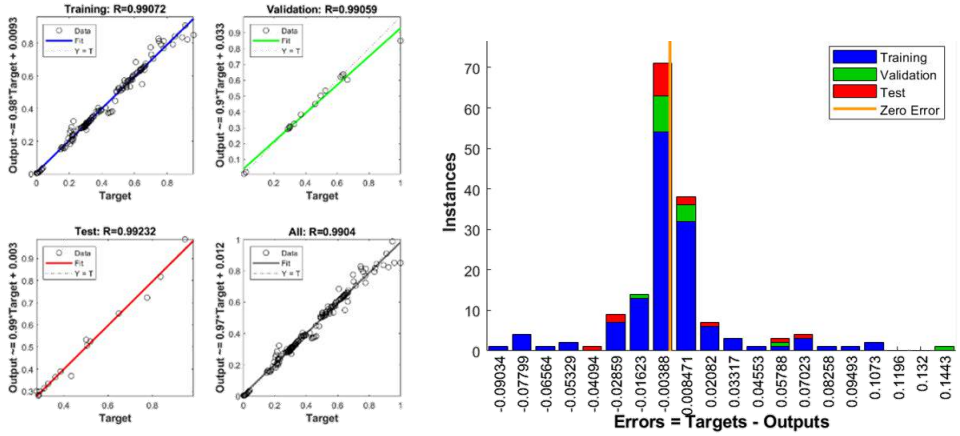

Figure B7.28 Regression coefficient and error histogram for model S_C+F(F)_80_10_10-8

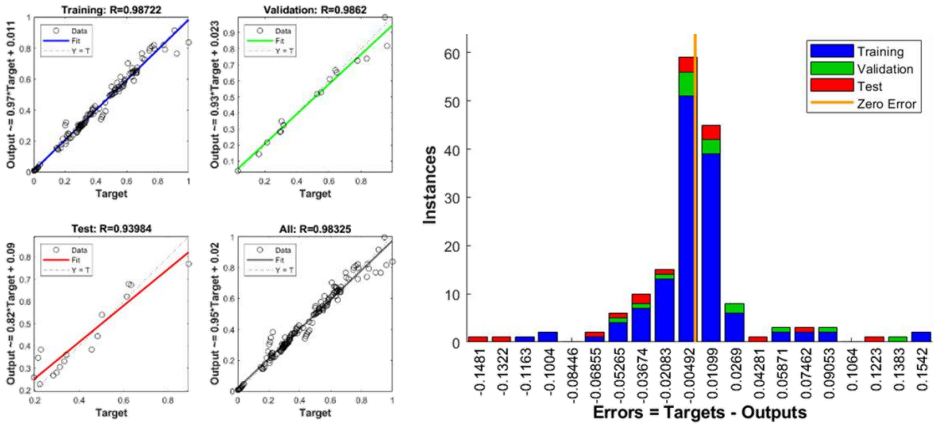

Figure B7.29 Regression coefficient and error histogram for model S_C+F(F)_80_10_10-17

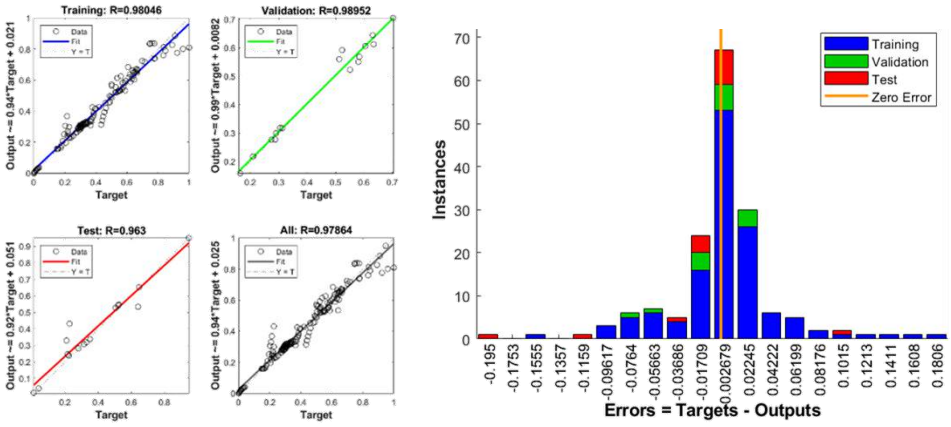

Figure B7.30 Regression coefficient and error histogram for model S_C+F(F)_80_10_10-24

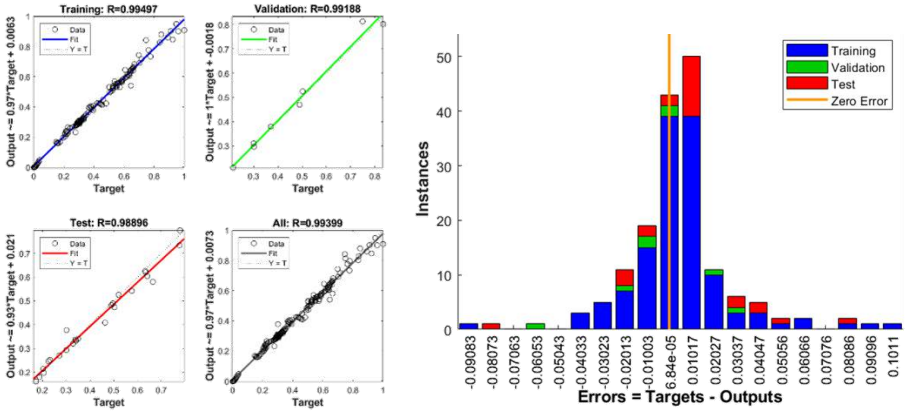

Figure B7.31 Regression coefficient and error histogram for model S_C+F(F)_80_5_15-8

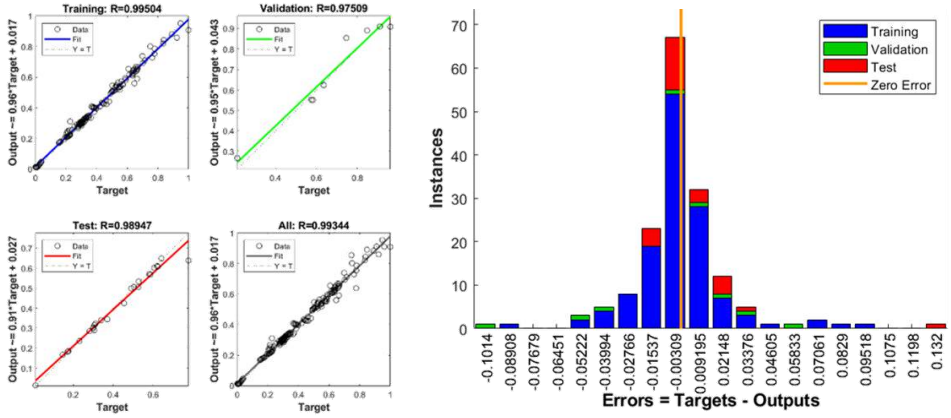

Figure B7.32 Regression coefficient and error histogram for model S_C+F(F)_80_5_15-17

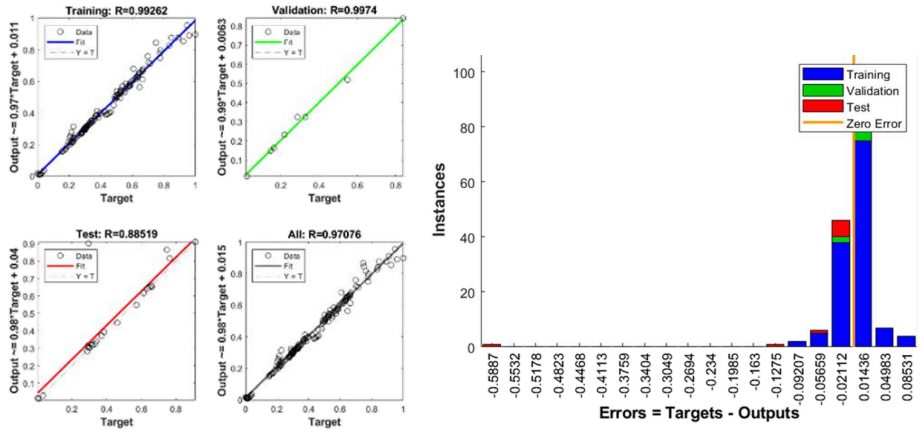

Figure B7.33 Regression coefficient and error histogram for model S_C+F(F)_80_5_15-24

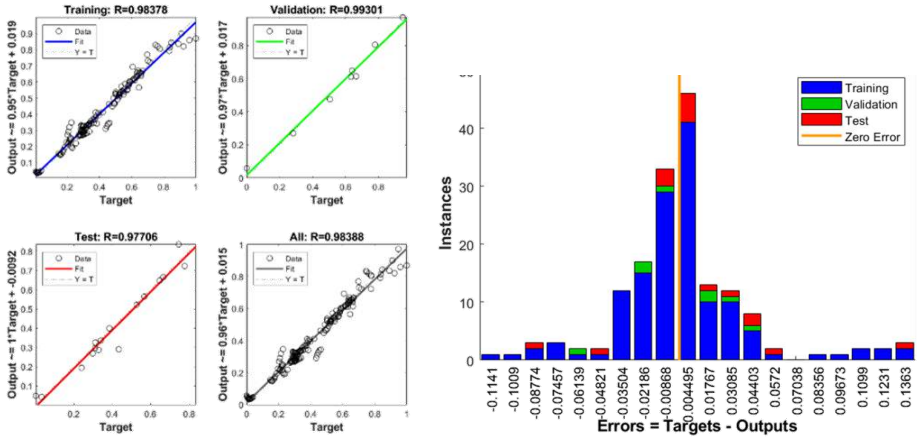

Figure B7.34 Regression coefficient and error histogram for model S_C+F(F)_85_5_10-8

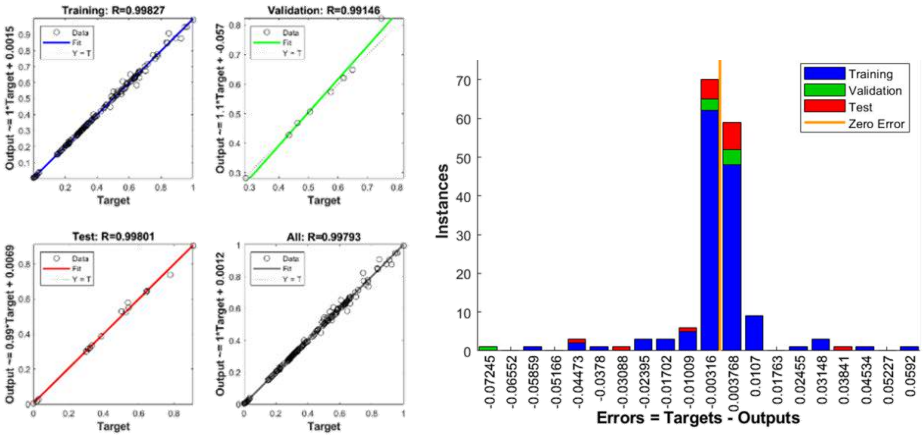

Figure B7.35 Regression coefficient and error histogram for model S_C+F(F)_85_5_10-17

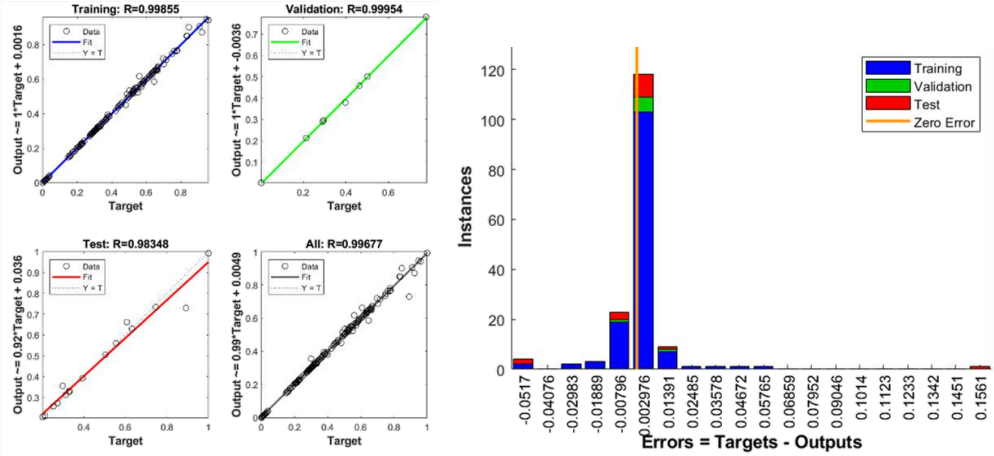

Figure B7.36 Regression coefficient and error histogram for model S_C+F(F)_85_5_10-24

Table B7.1 Results for prescribed models based on datasets from Group II

#	Model	Regression coefficient - training	Regression coefficient - validation	Regression coefficient - testing	Regression coefficient - total	Mean squared error - MSE	Epoch
1	S_C+F_70_10_20-8	0.99629	0.98852	0.98441	0.99333	0.00041914	70
2	S_C+F_70_10_20-17	0.99918	0.99693	0.9643	0.99401	0.00009324	81
3	S_C+F_70_10_20-24	0.98782	0.98054	0.93792	0.97471	0.0012624	24
4	S_C+F_80_10_10-8	0.9985	0.99993	0.99866	0.9987	0.0001597	183
5	S_C+F_80_10_10-17	0.98866	0.99668	0.9673	0.98778	0.001245	33
6	S_C+F_80_10_10-24	0.97764	0.9449	0.94194	0.97232	0.002636	12
7	S_C+F_80_5_15-8	0.98663	0.97822	0.98998	0.98657	0.0013906	38
8	S_C+F_80_5_15-17	0.99892	0.99907	0.99575	0.99845	0.0001255	47
9	S_C+F_80_5_15-24	0.99497	0.98721	0.85313	0.97099	0.00056264	27
10	S_C+F_85_5_10-8	0.98122	0.95136	0.9919	0.98092	0.00190345	38
11	S_C+F_85_5_10-17	0.99868	0.9981	0.99761	0.99851	0.0001442	78
12	S_C+F_85_5_10-24	0.99933	0.99988	0.99622	0.99902	0.0000703	113
13	S_C+F(C)_70_10_20-8	0.99996	0.99984	0.88325	0.96522	0.0000045	101
14	S_C+F(C)_70_10_20-17	0.99974	0.99981	0.98778	0.9974	0.00003163	46
15	S_C+F(C)_70_10_20-24	0.99991	0.99976	0.97514	0.99494	0.0000101	51
16	S_C+F(C)_80_10_10-8	0.99995	0.99982	0.99908	0.99989	0.00000696	176
17	S_C+F(C)_80_10_10-17	0.99996	0.99985	0.9994	0.99994	0.00000473	143
18	S_C+F(C)_80_10_10-24	0.9999	0.99992	0.99992	0.99993	0.0000067	54
19	S_C+F(C)_80_5_15-8	0.98644	0.99994	0.93805	0.98166	0.001706	21
20	S_C+F(C)_80_5_15-17	0.99984	0.99978	0.85702	0.97192	0.0000197	32
21	S_C+F(C)_80_5_15-24	0.99957	0.99986	0.99375	0.99863	0.0000495	32
22	S_C+F(C)_85_5_10-8	0.99985	0.99984	0.9999	0.99985	0.0000178	57
23	S_C+F(C)_85_5_10-17	0.99334	0.99921	0.98391	0.99298	0.0008709	28
24	S_C+F(C)_85_5_10-24	0.99522	0.99884	0.99226	0.99501	0.0006186	24
25	S_C+F(F)_70_10_20-8	0.97565	0.98298	0.9758	0.9759	0.0020427	12
26	S_C+F(F)_70_10_20-17	0.99737	0.99486	0.99466	0.99651	0.0002681	39
27	S_C+F(F)_70_10_20-24	0.9978	0.98805	0.96117	0.98743	0.0002038	61
28	S_C+F(F)_80_10_10-8	0.99072	0.99059	0.99232	0.9904	0.0008968	45
29	S_C+F(F)_80_10_10-17	0.98722	0.9862	0.93984	0.98325	0.0011868	17
30	S_C+F(F)_80_10_10-24	0.98046	0.98952	0.962	0.97864	0.001998	10
31	S_C+F(F)_80_5_15-8	0.99497	0.99188	0.98896	0.99399	0.0005593	45
32	S_C+F(F)_80_5_15-17	0.99504	0.97509	0.98947	0.99344	0.000515	34
33	S_C+F(F)_80_5_15-24	0.99262	0.9974	0.88519	0.97076	0.0006981	13
34	S_C+F(F)_85_5_10-8	0.98378	0.99301	0.97706	0.98388	0.0015214	15
35	S_C+F(F)_85_5_10-17	0.99827	0.99146	0.99801	0.99793	0.0001675	105
36	S_C+F(F)_85_5_10-24	0.99855	0.99954	0.98348	0.99677	0.0001397	102

B8. Results for scripted models – Group II

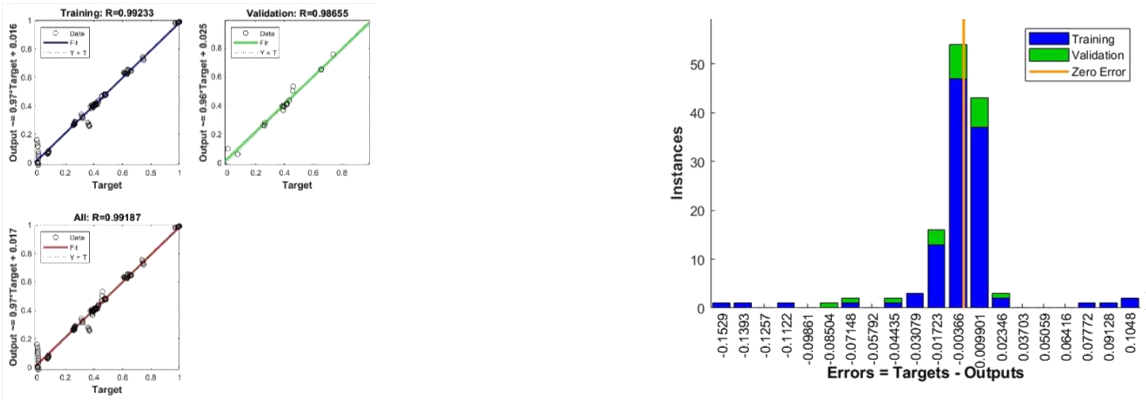

Figure B8.1 Regression coefficients and error histogram for model COMP Initial

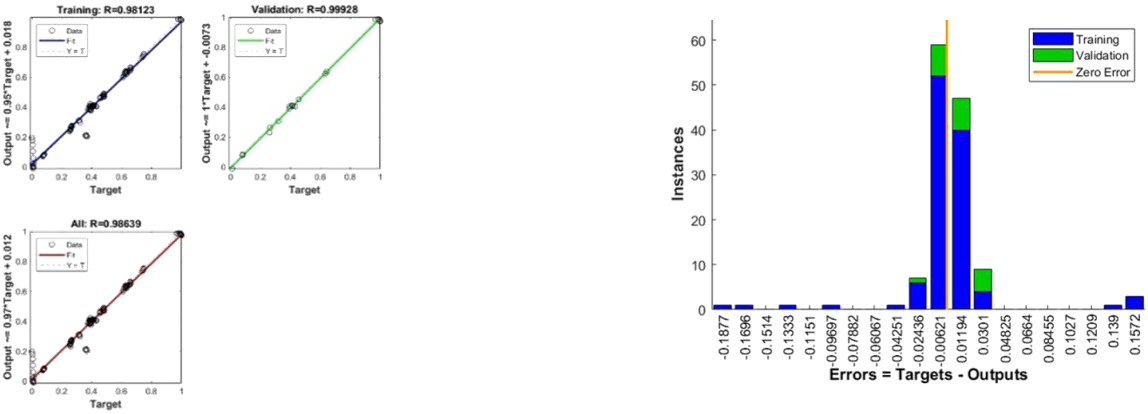

Figure B8.2 Regression coefficients and error histogram for model COMP Optimized n=10

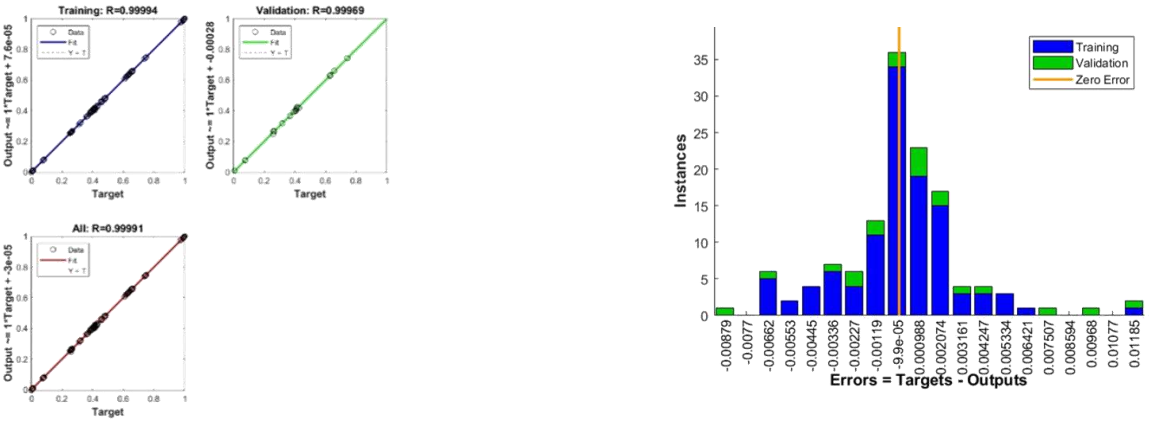

Figure B8.3 Regression coefficients and error histogram for model COP Optimized n=13

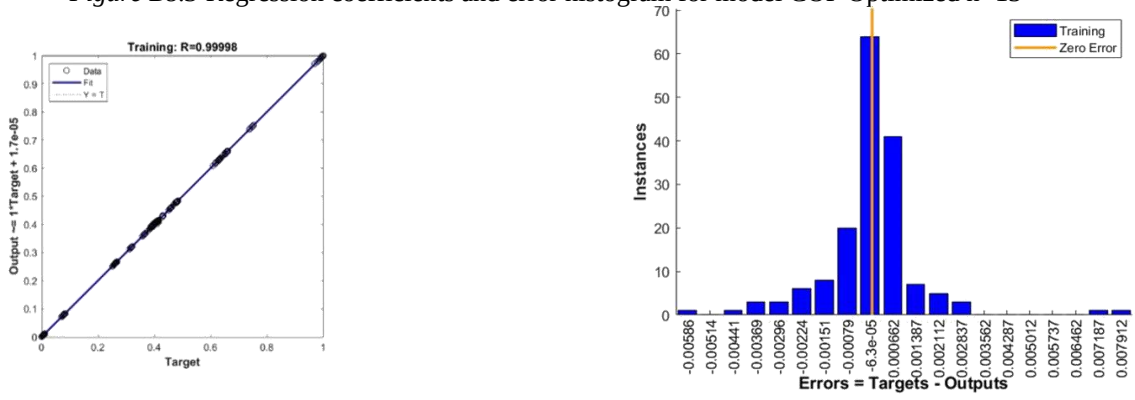

Figure B8.4 Regression coefficients and error histogram for model COMP Working

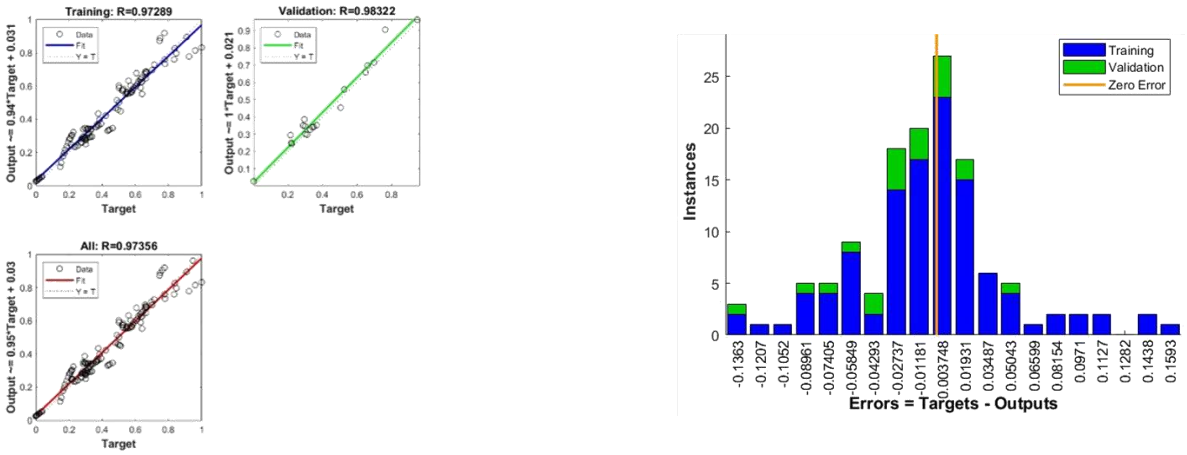

Figure B8.5 Regression coefficients and error histogram for model FLEX Initial

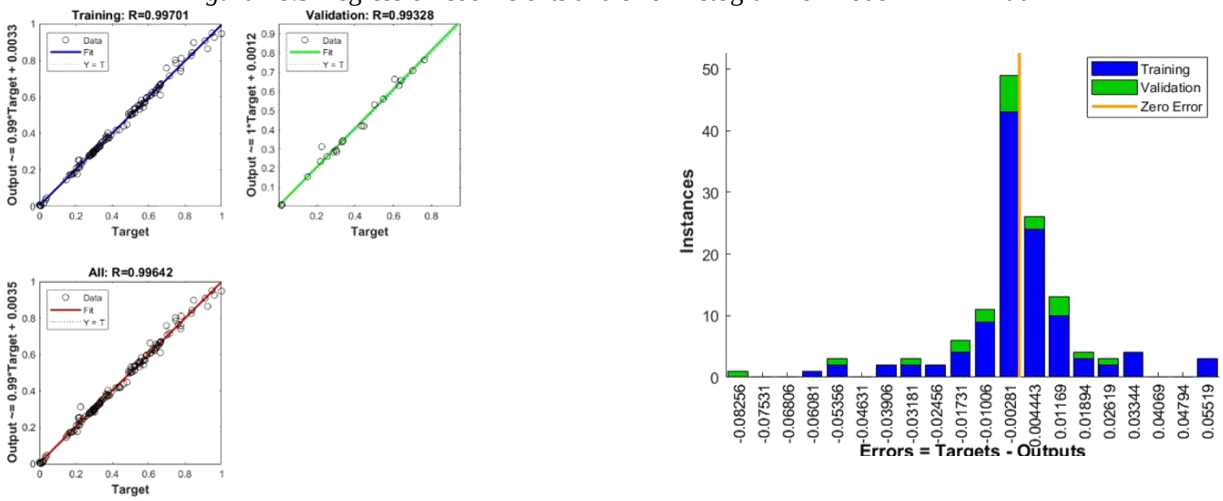

Figure B8.6 Regression coefficients and error histogram for model FLEX Optimized n=10

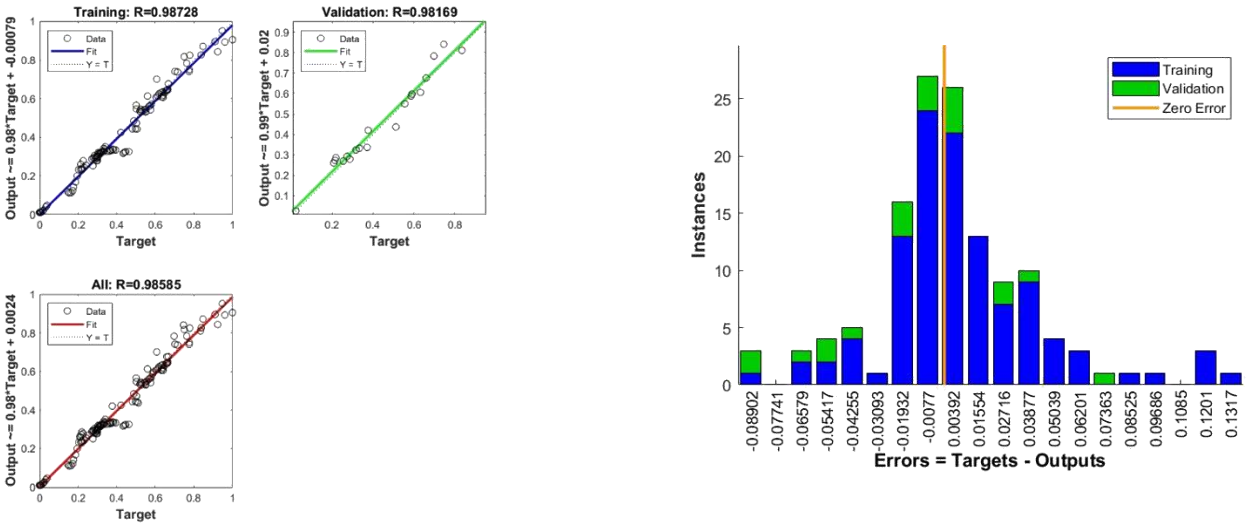

Figure B8.7 Regression coefficients and error histogram for model FLEX Optimized n=13

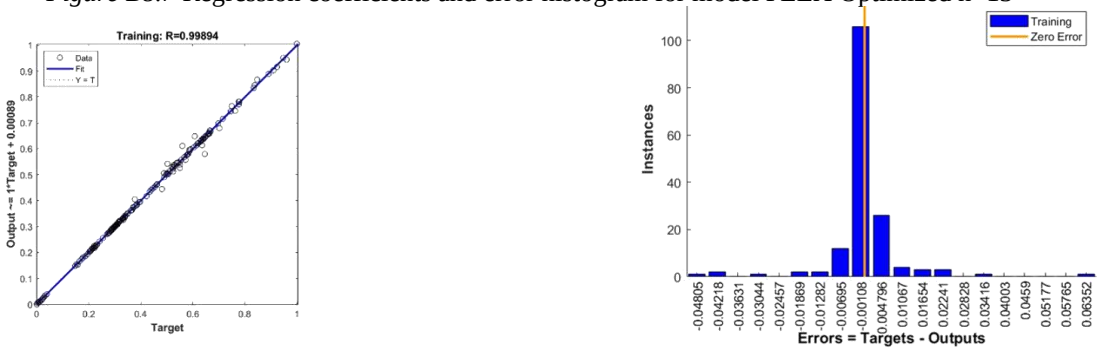

Figure B8.8 Regression coefficients and error histogram for model FLEX Working

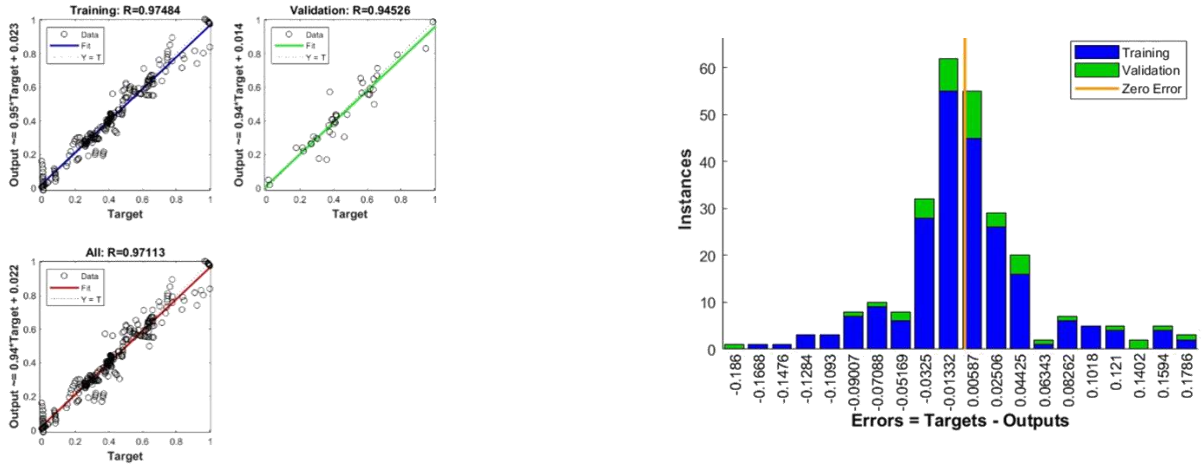

Figure B8.9 Regression coefficients and error histogram for model COMP+FLEX Initial

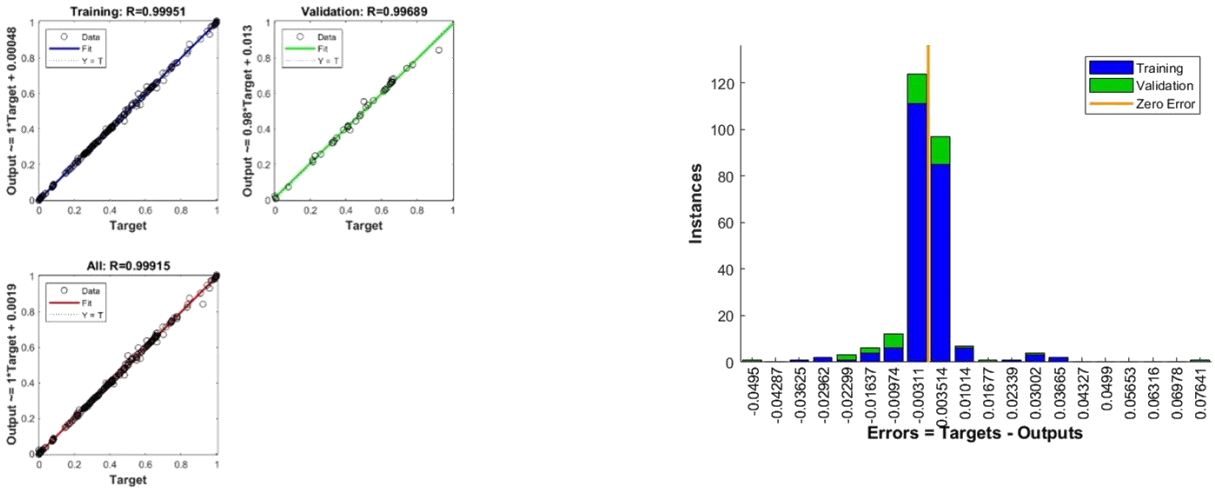

Figure B8.10 Regression coefficients and error histogram for model COMP+FLEX Optimized n=13

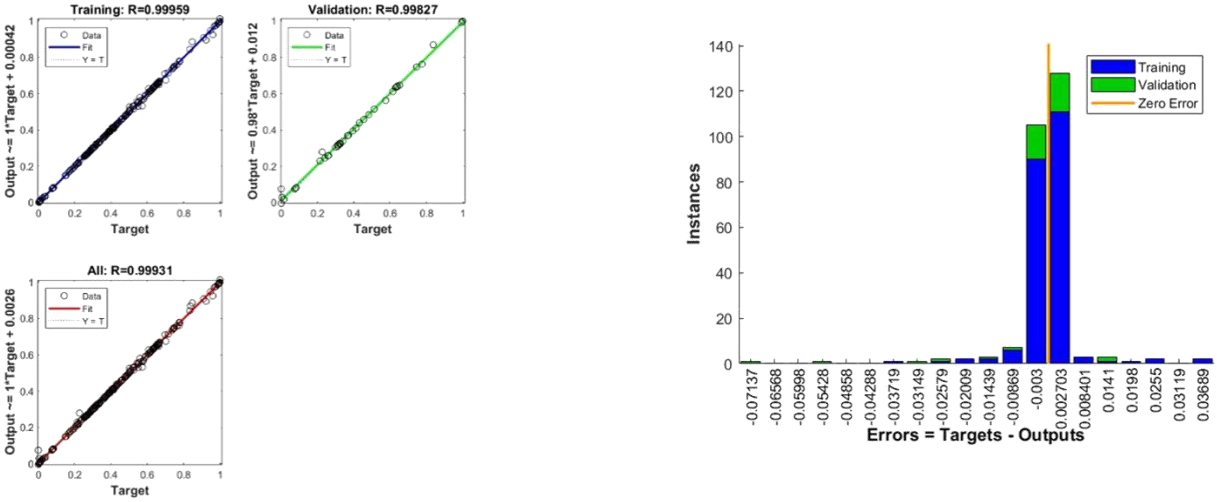

Figure B8.11 Regression coefficients and error histogram for model COMP+FLEX Optimized n=17

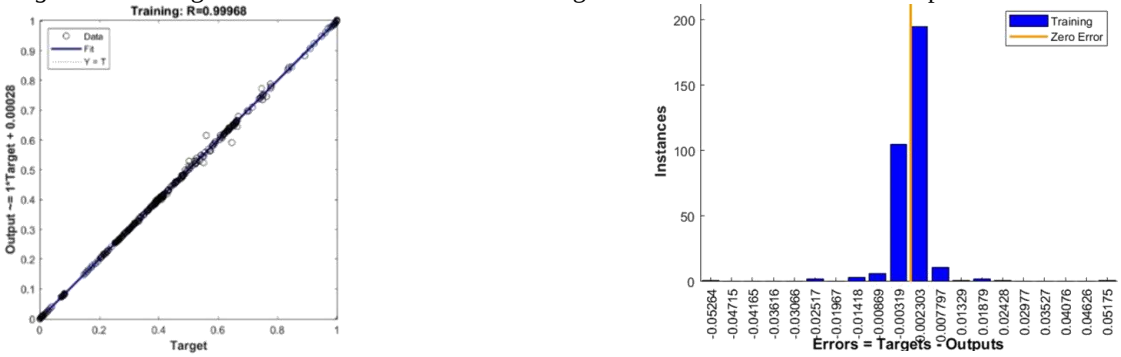

Figure B8.12 Regression coefficients and error histogram for model COMP+FLEX Working

Table B8.1 Results for scripted models based on datasets from Group II

#	Model	Regression coefficient - training	Regression coefficient - validation	Regression coefficient - total	Mean squared error - MSE	Root mean squared error - RMSE
1	COMP Initial	0.99233	0.98655	0.99187	0.001	0.0319
2	COMP Optimized n=10	0.98123	0.99928	0.98639	0.0019	0.00065577
3	COMP Optimized n=13	0.9994	0.99969	0.99991	0.000007986	0.0028
4	COMP Working	0.99998	/	0.99998	0.00000231	0.0028
5	FLEX Initial	0.97289	0.98322	0.97356	0.0028	0.0533
6	FLEX Optimized n=10	0.99701	0.99238	0.99642	0.0003194	0.00006157
7	FLEX Optimized n=13	0.98728	0.98169	0.98585	0.0014	0.0378
8	FLEX Working	0.99894	/	0.99894	0.0001047	0.0378
9	COMP+FLEX Initial	0.97484	0.94526	0.97113	0.1461	0.3823
10	COMP+FLEX Optimized n=13	0.99951	0.99689	0.99915	0.1438	0.2505
11	COMP+FLEX Optimized n=17	0.99959	0.99827	0.99931	0.135	0.3674
12	COMP+FLEX Working	0.99968	/	0.99968	0.138	0.3674

B9. Results – Evaluation

Evaluation of models in Group I

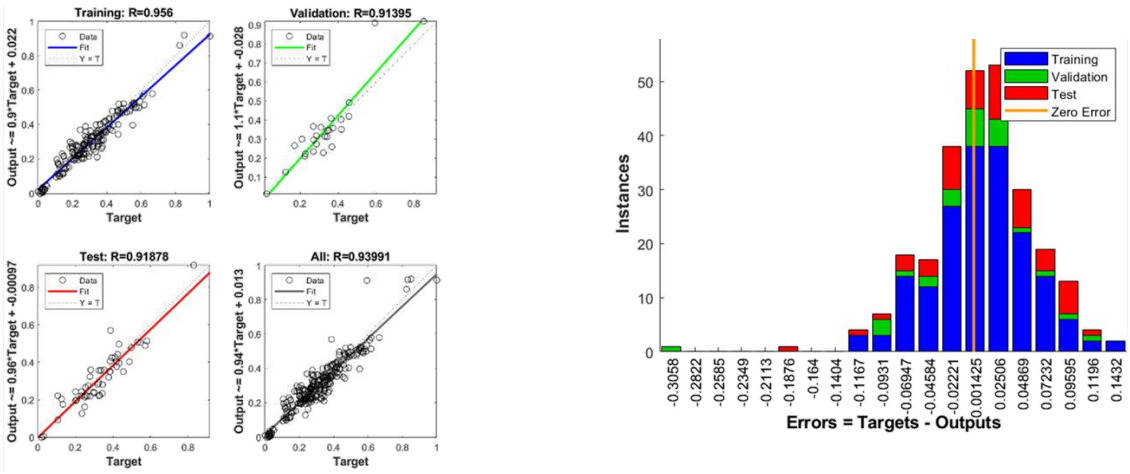

Figure B9.1 Regression coefficient and error histogram after training EV-COMP_70_10_20-41

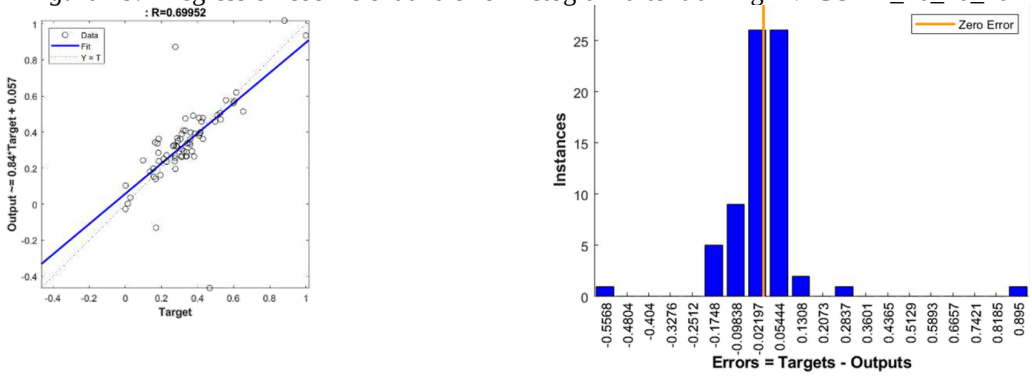

Figure B9.2 Regression coefficient and error histogram after testing EV-COMP_70_10_20-41

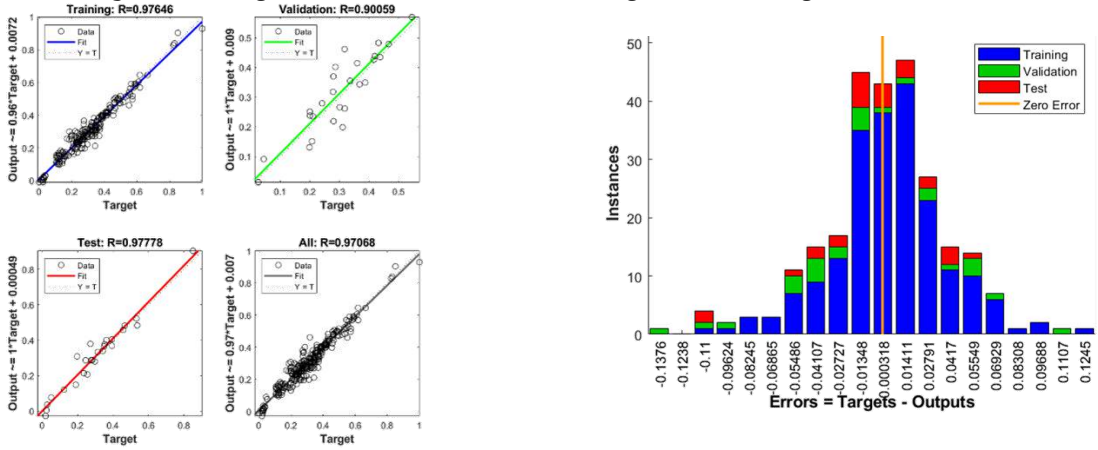

Figure B9.3 Regression coefficient and error histogram after training EV-COMP_80_10_10-60

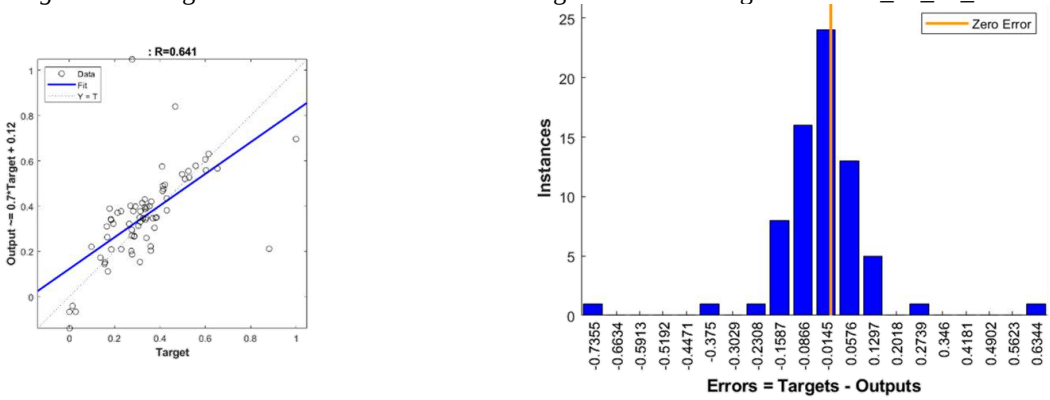

Figure B9.4 Regression coefficient and error histogram after testing EV-COMP_80_10_10-60

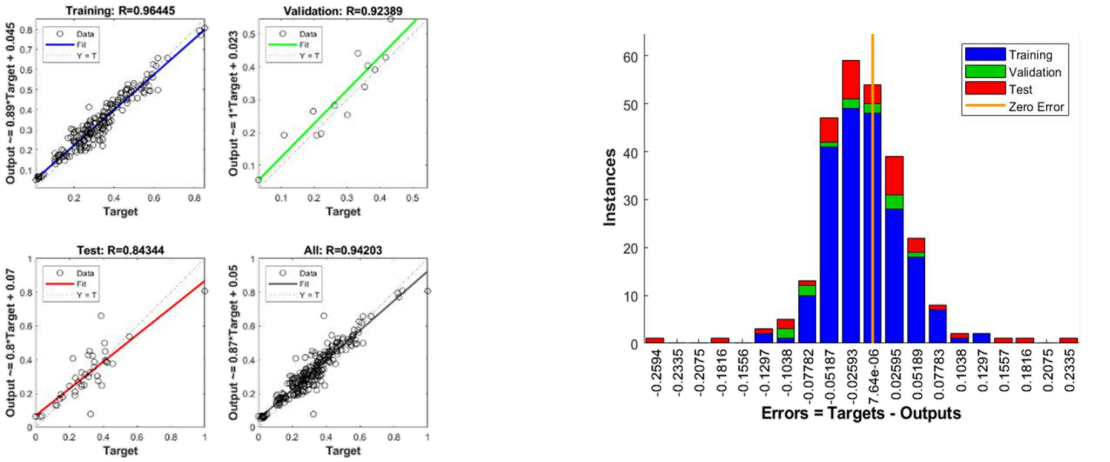

Figure B9.5 Regression coefficient and error histogram after training EV-COMP_80_5_15-20

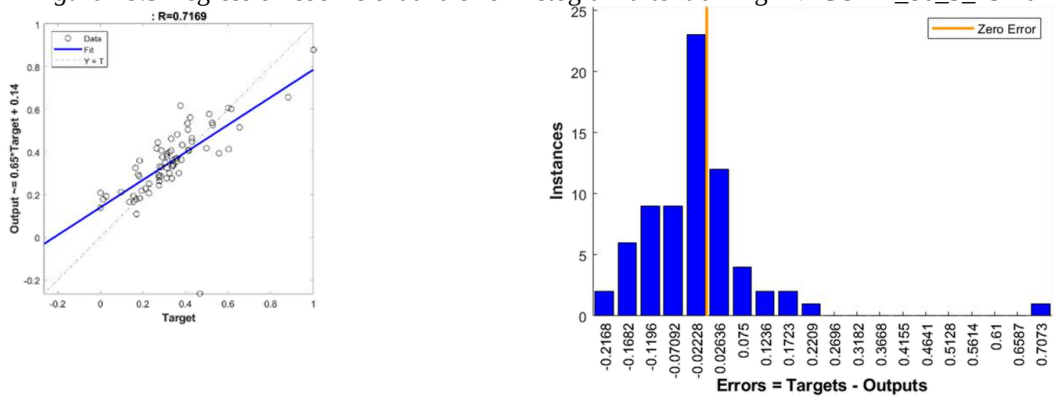

Figure B9.6 Regression coefficient and error histogram after testing EV-COMP_80_5_15-20

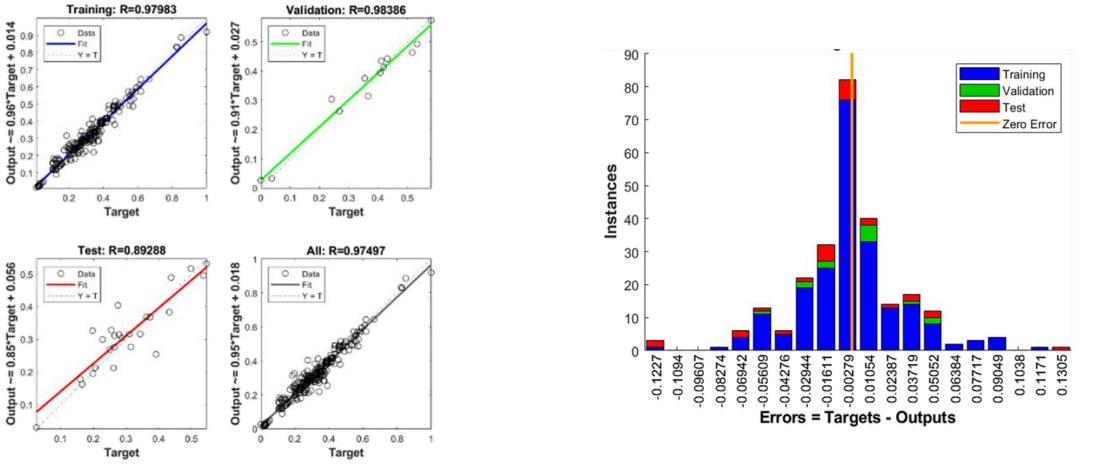

Figure B9.7 Regression coefficient and error histogram after training EV-COMP_85_5_10-41

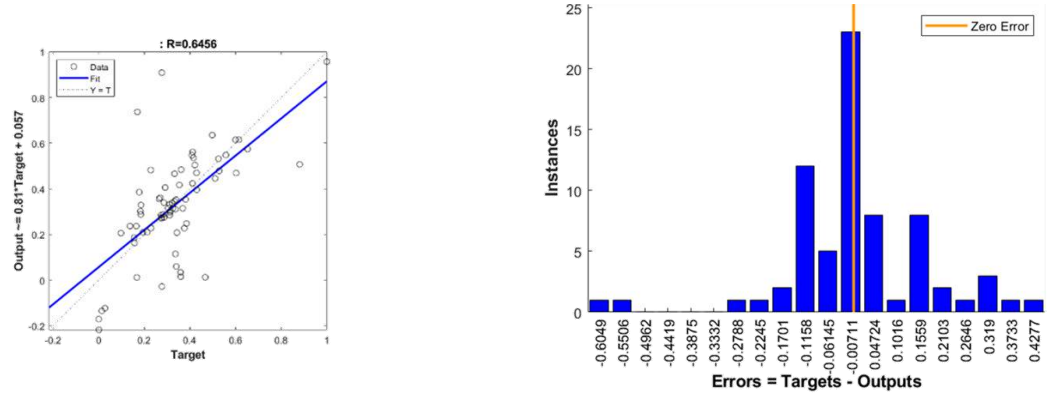

Figure B9.8 Regression coefficient and error histogram after testing EV- COMP_85_5_10-41

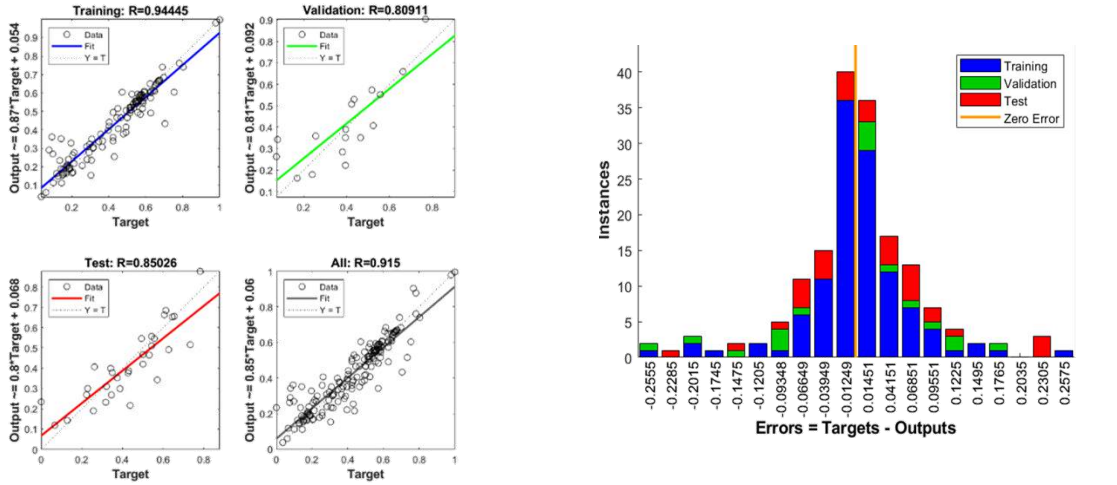

Figure B9.9 Regression coefficient and error histogram after training EV-FLEX_70_10_20-48

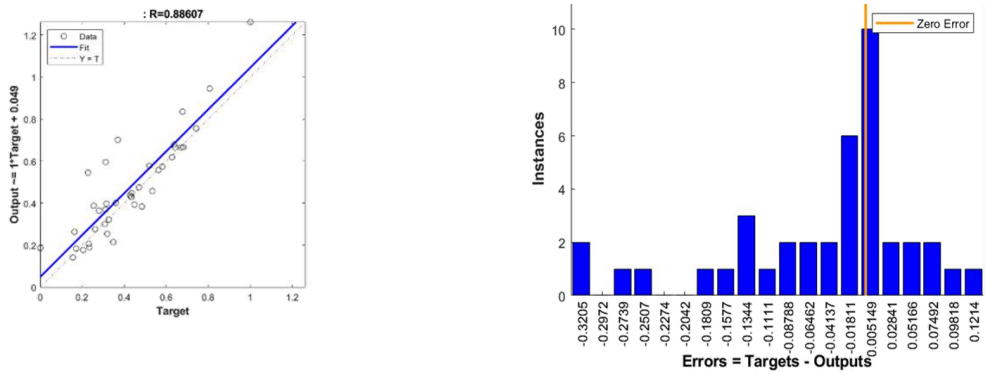

Figure B9.10 Regression coefficient and error histogram after testing EV- FLEX_70_10_20-48

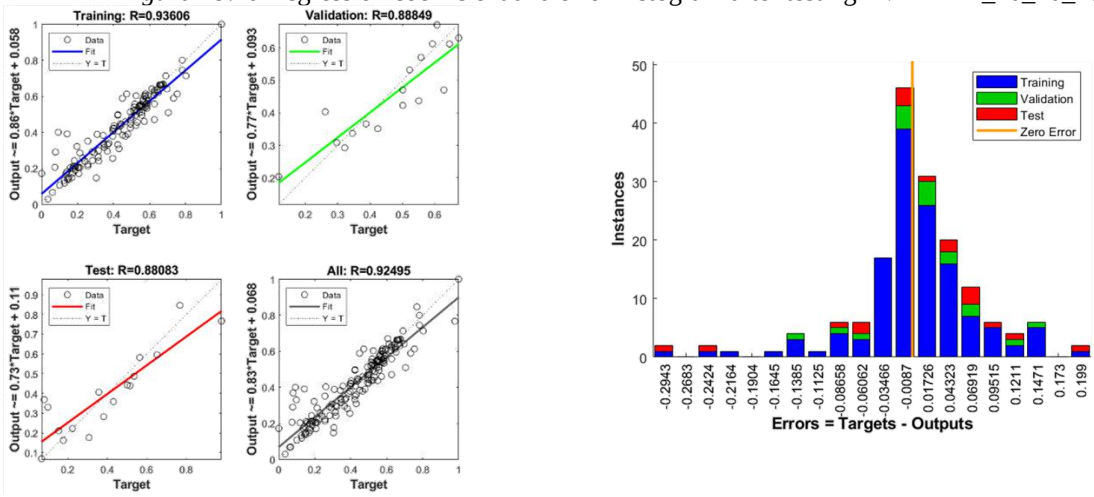

Figure B9.11 Regression coefficient and error histogram after training EV-FLEX_80_10_10-48

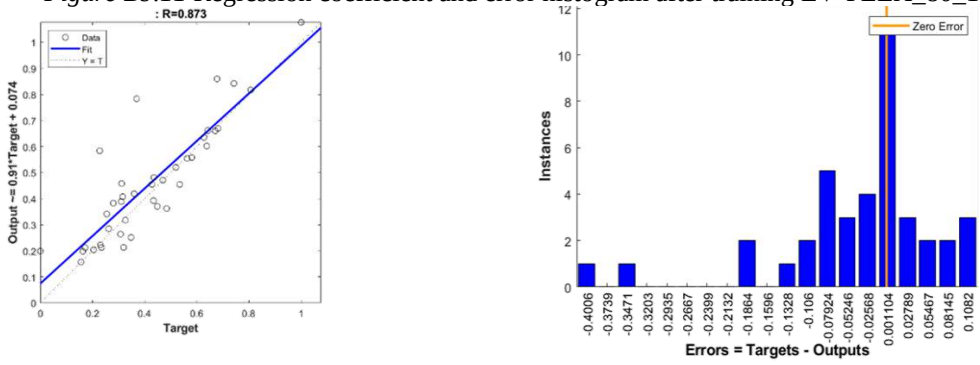

Figure B9.12 Regression coefficient and error histogram after testing EV- FLEX_80_10_10-48

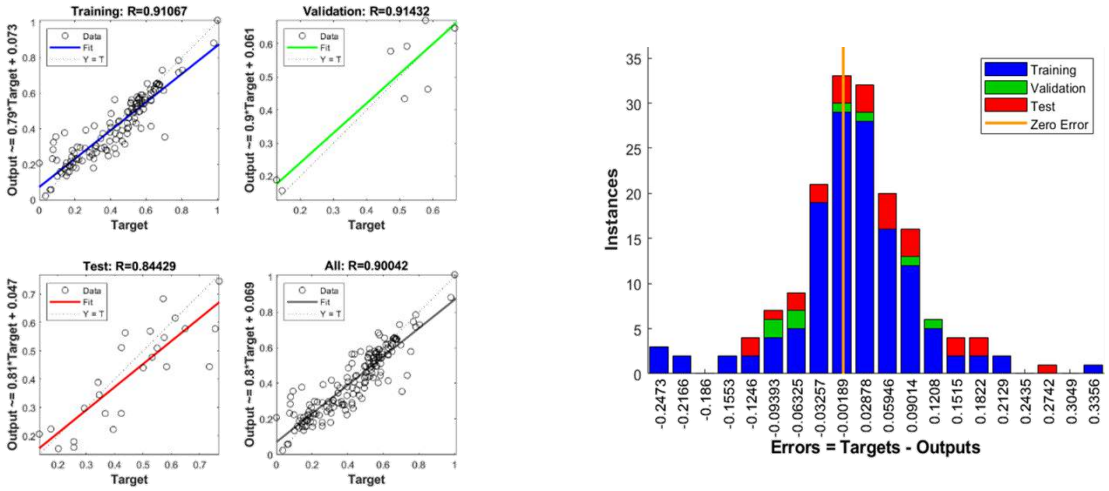

Figure B9.13 Regression coefficient and error histogram after training EV-FLEX_80_5_15-16

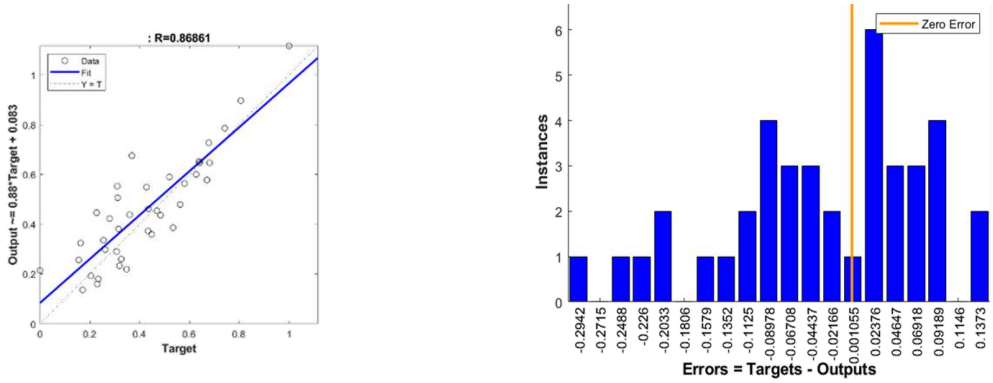

Figure B9.14 Regression coefficient and error histogram after testing EV- FLEX_80_5_15-16

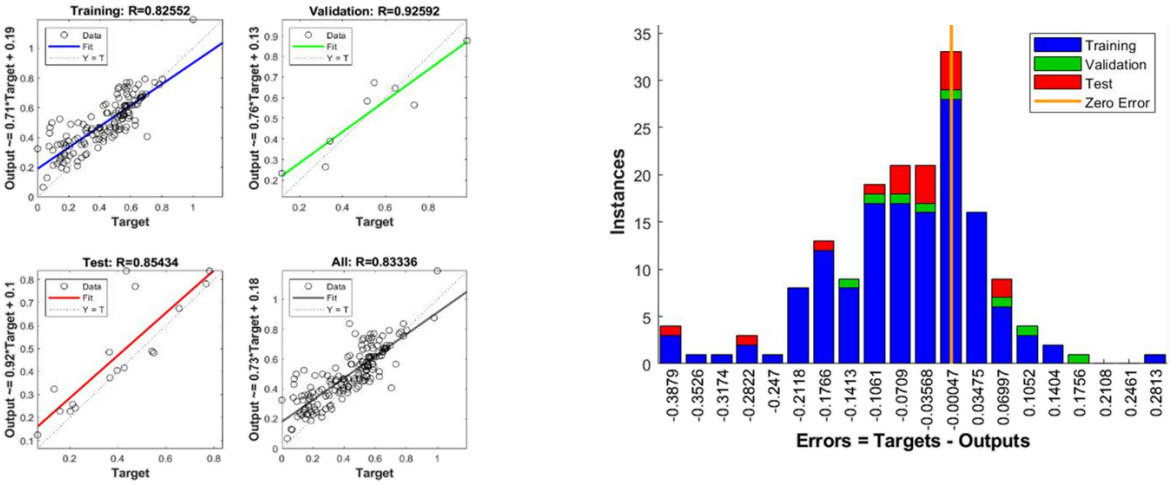

Figure B9.15 Regression coefficient and error histogram after training EV-FLEX_85_5_10-16

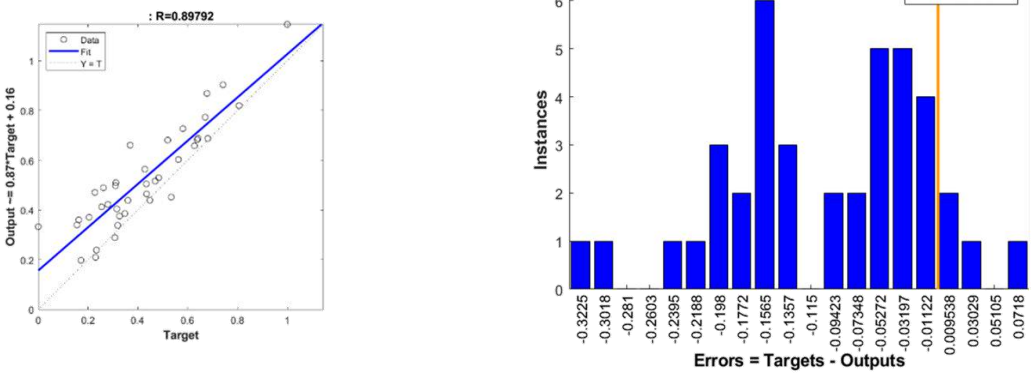

Figure B9.16 Regression coefficient and error histogram after testing EV- FLEX_85_5_10-16

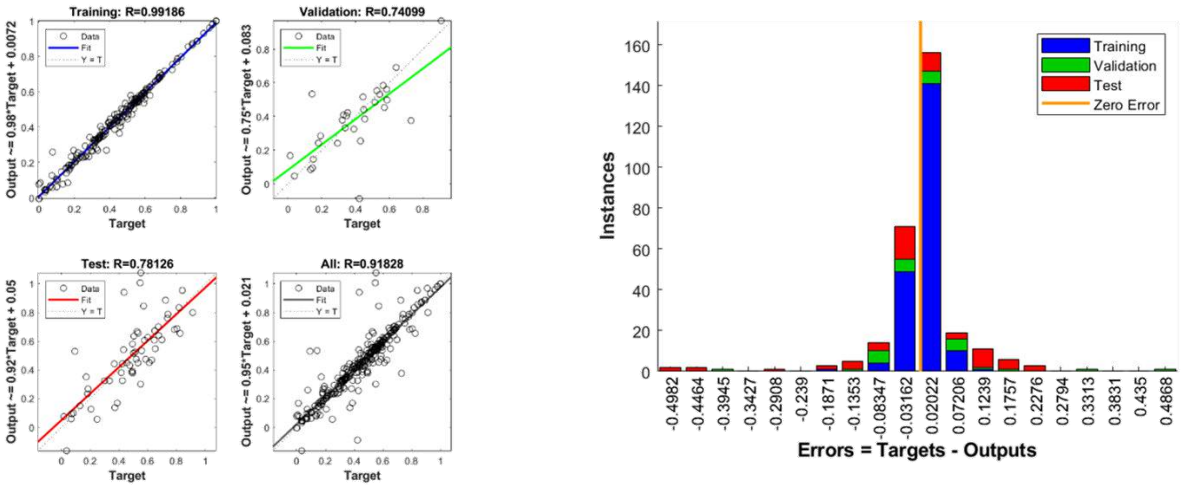

Figure B9.17 Regression coefficient and error histogram after training EV-C+F_70_10_20-33

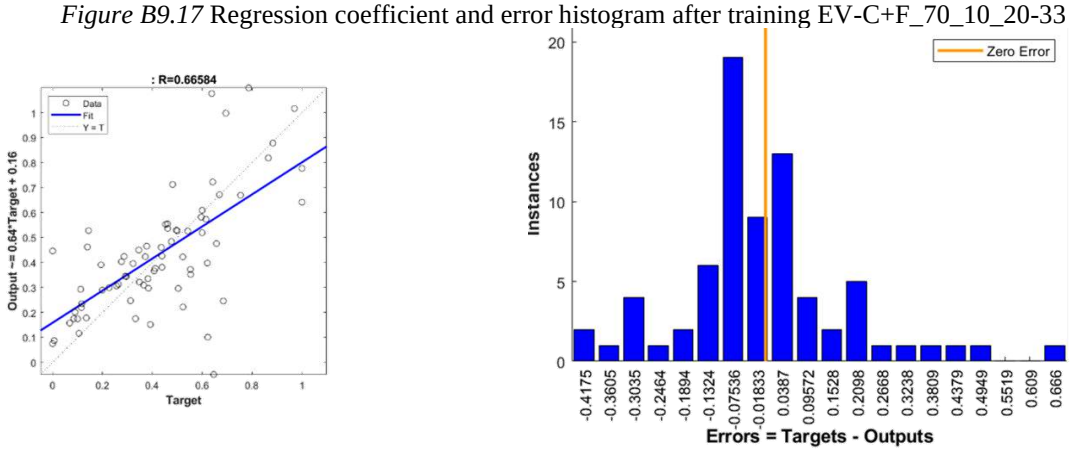

Figure B9.18 Regression coefficient and error histogram after testing EV-C+F_70_10_20-33

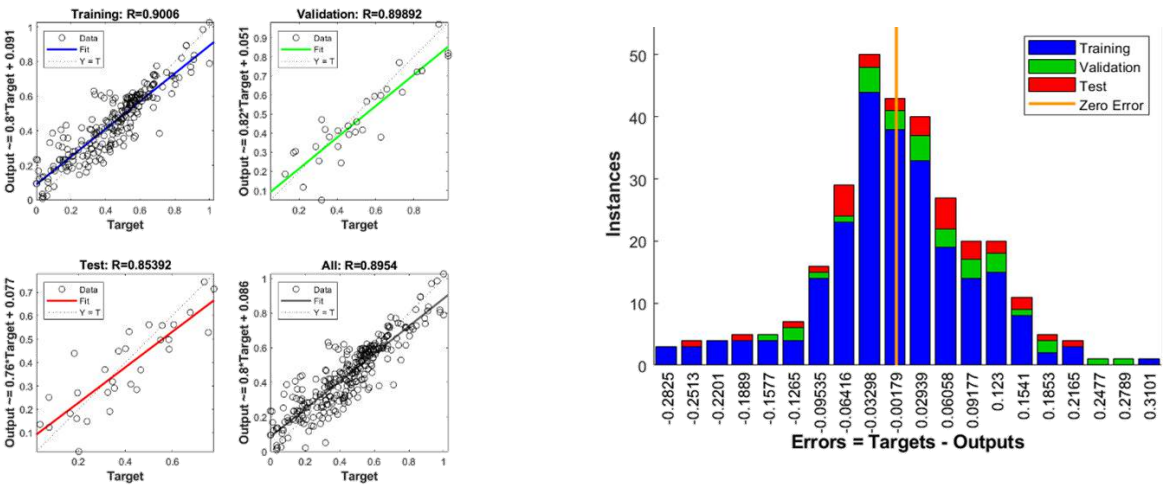

Figure B9.19 Regression coefficient and error histogram after training EV-C+F_80_10_10-11

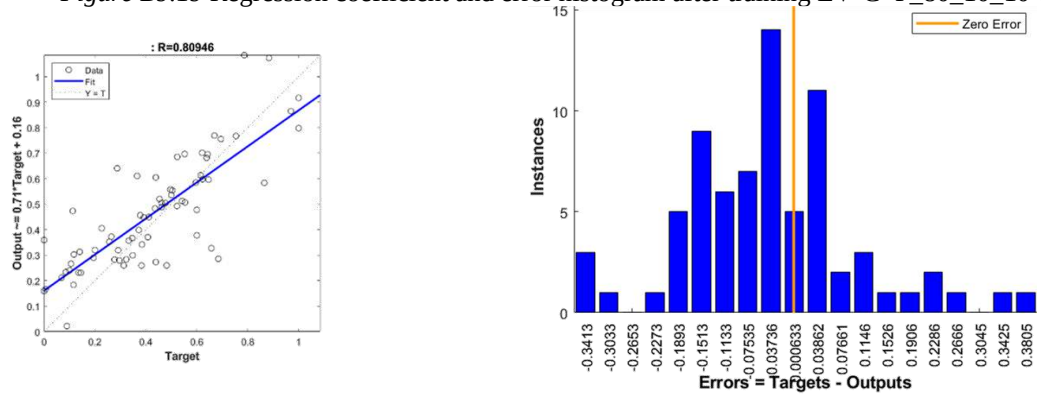

Figure B9.20 Regression coefficient and error histogram after testing EV-C+F_80_10_10-11

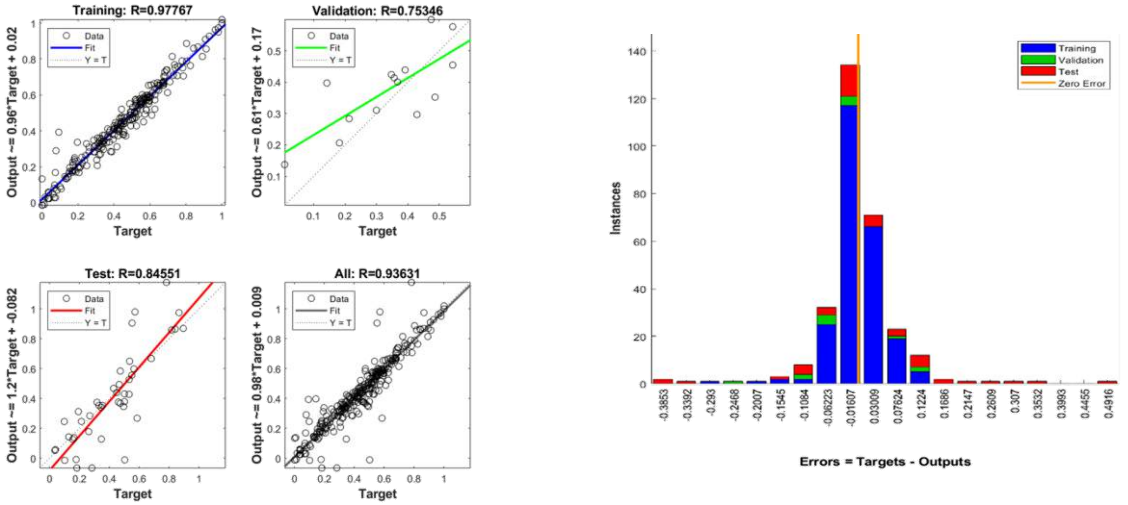

Figure B9.21 Regression coefficient and error histogram after training EV-C+F_80_5_15-11

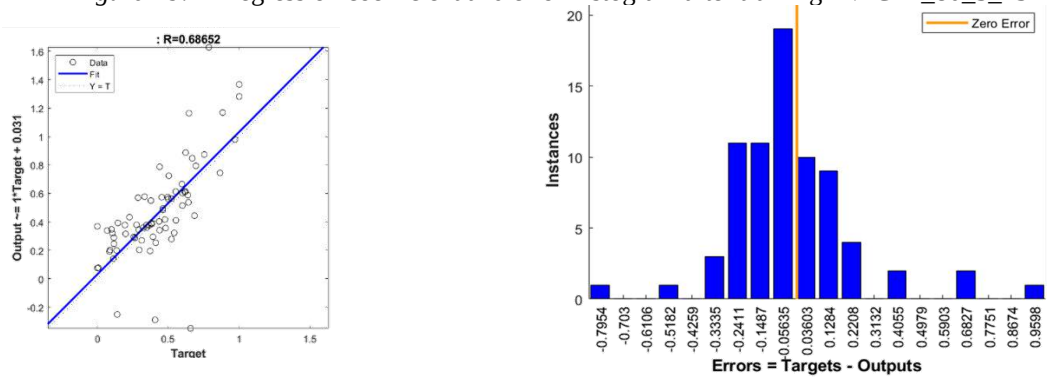

Figure B9.22 Regression coefficient and error histogram after testing EV-C+F_80_5_15-11

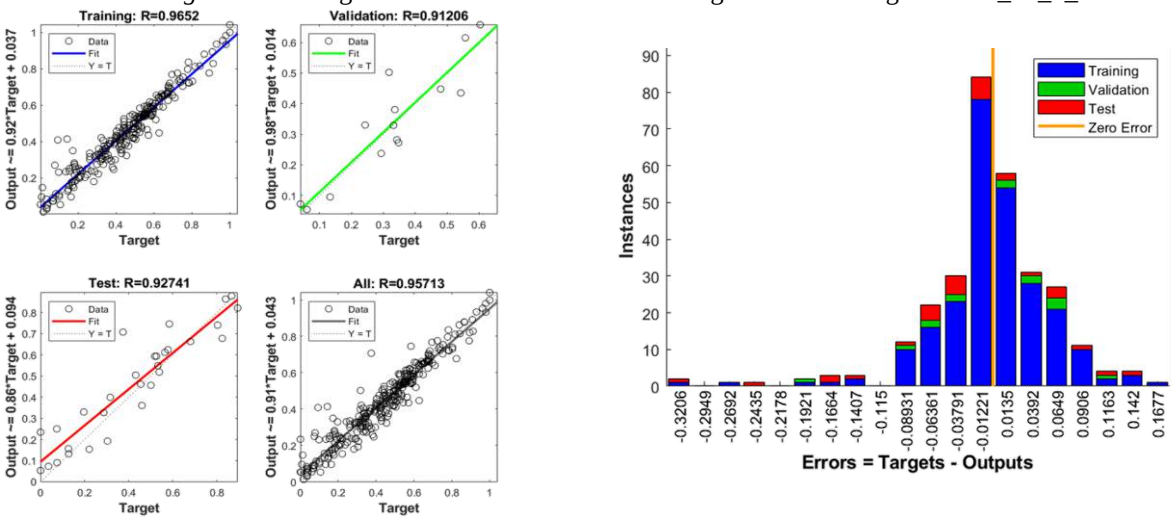

Figure B9.23 Regression coefficient and error histogram after training EV-C+F_85_5_10-33

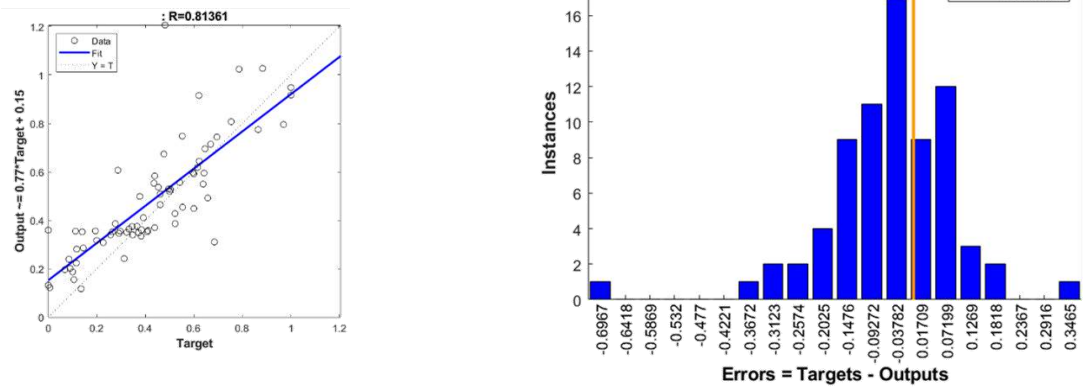

Figure B9.24 Regression coefficient and error histogram after testing EV-C+F_85_5_10-33

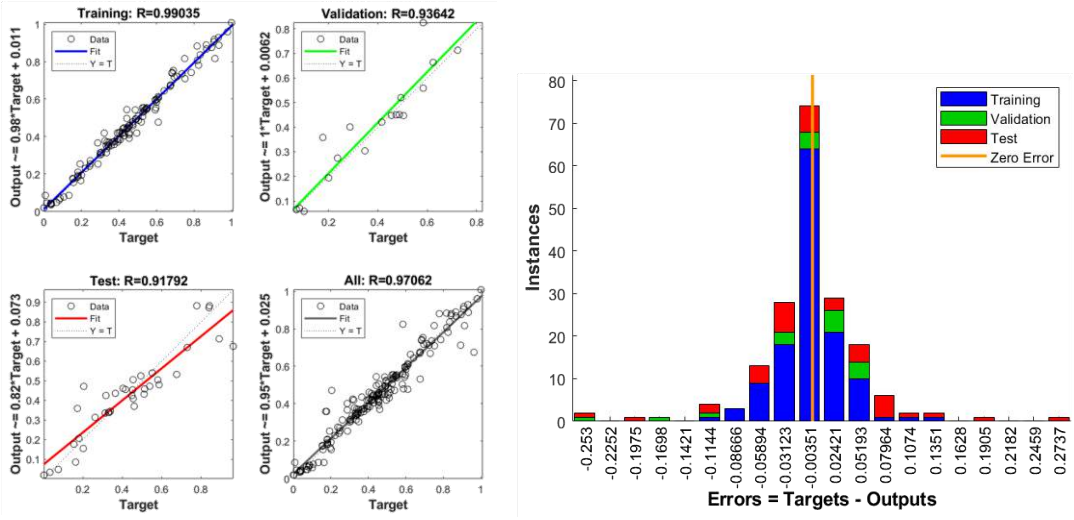

Figure B9.25 Regression coefficient and error histogram after training EV-C+F(C)_70_10_20-23

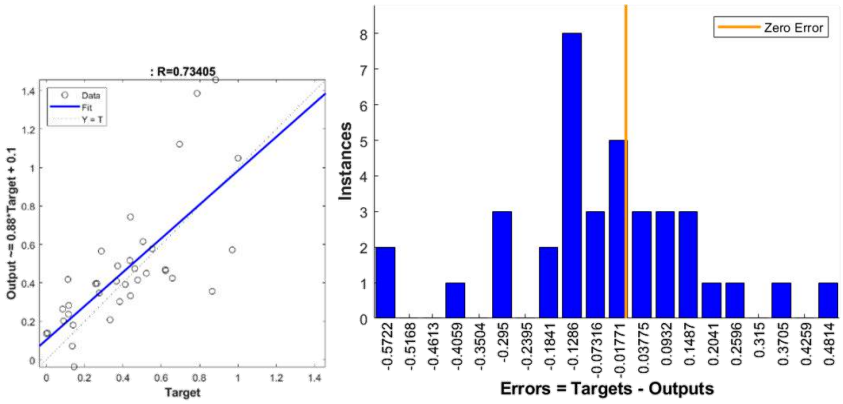

Figure B9.26 Regression coefficient and error histogram after testing EV-C+F(C)_70_10_20-23

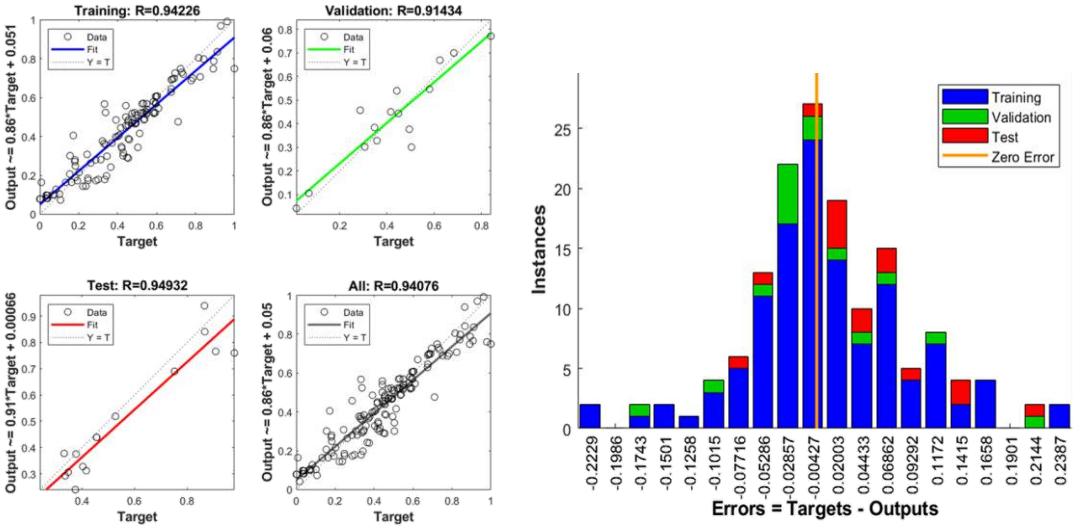

Figure B9.27 Regression coefficient and error histogram after training EV-C+F(C)_80_10_10-33

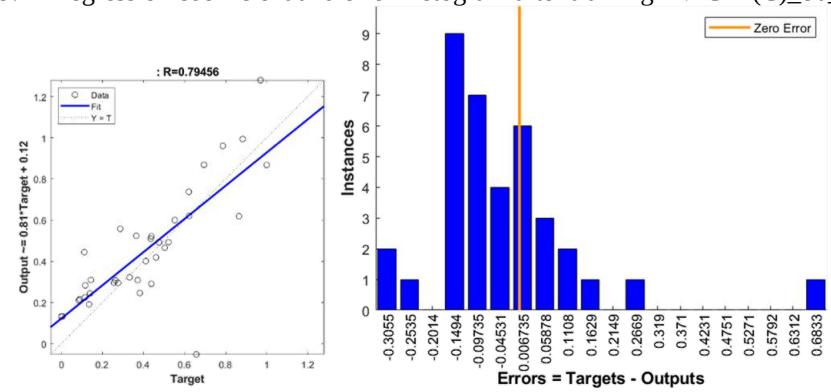

Figure B9.28 Regression coefficient and error histogram after testing EV-C+F(C)_80_10_10-33

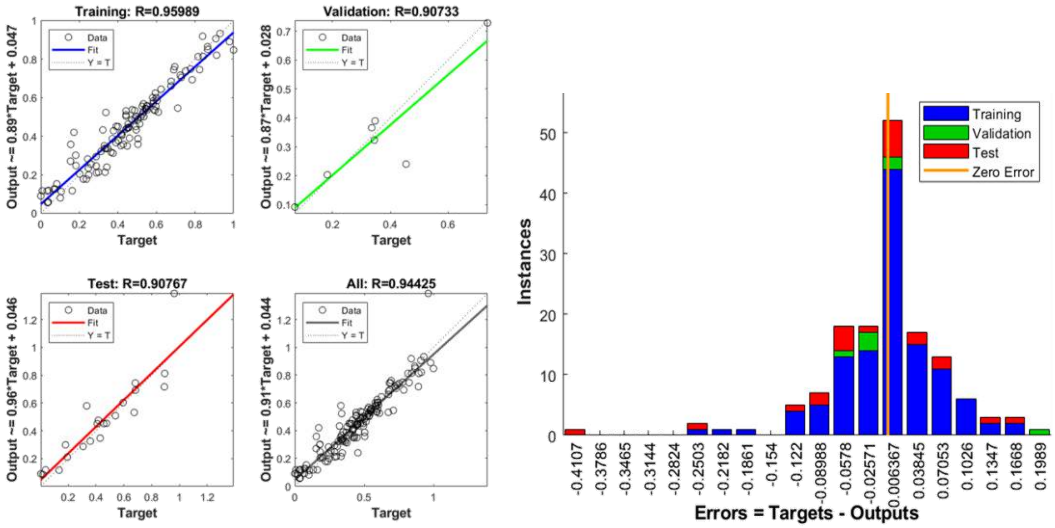

Figure B9.29 Regression coefficient and error histogram after training EV-C+F(C)_80_5_15-23

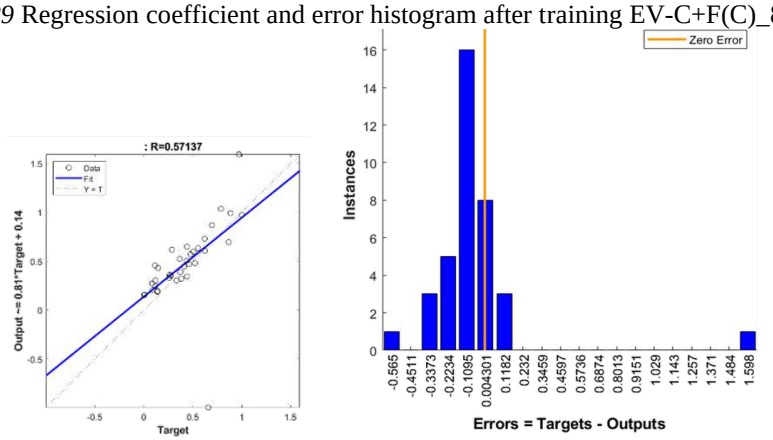

Figure B9.30 Regression coefficient and error histogram after testing EV-C+F(C)_80_5_15-23

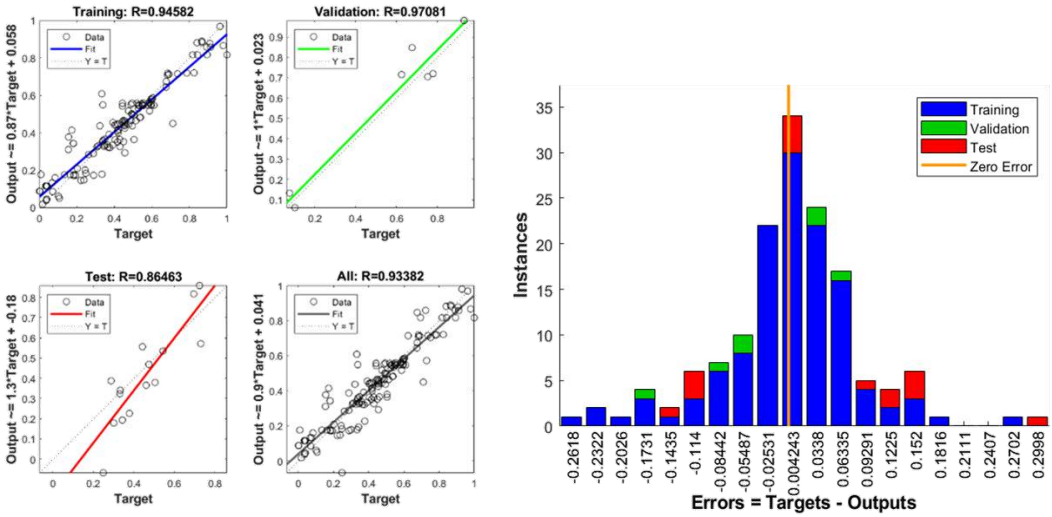

Figure B9.31 Regression coefficient and error histogram after training EV-C+F(C)_85_5_10-33

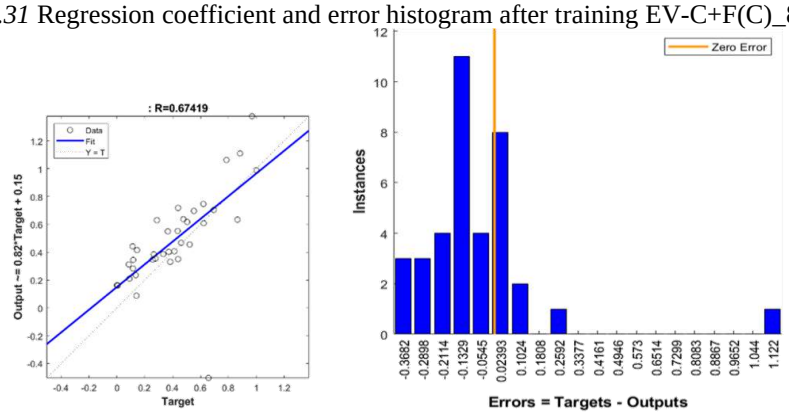

Figure B9.32 Regression coefficient and error histogram after testing EV-C+F(C)_85_5_10-33

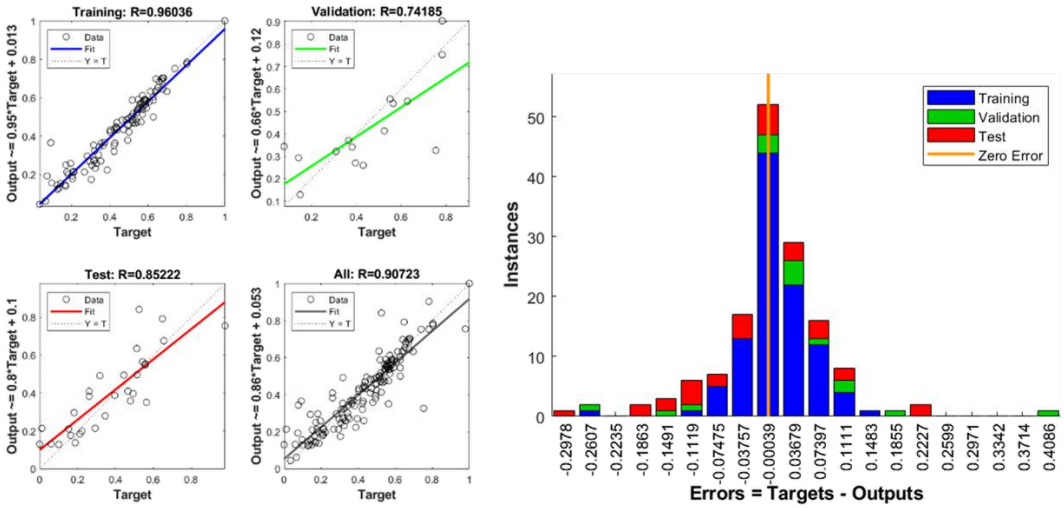

Figure B9.33 Regression coefficient and error histogram after training EV-C+F(F)_70_10_20-23

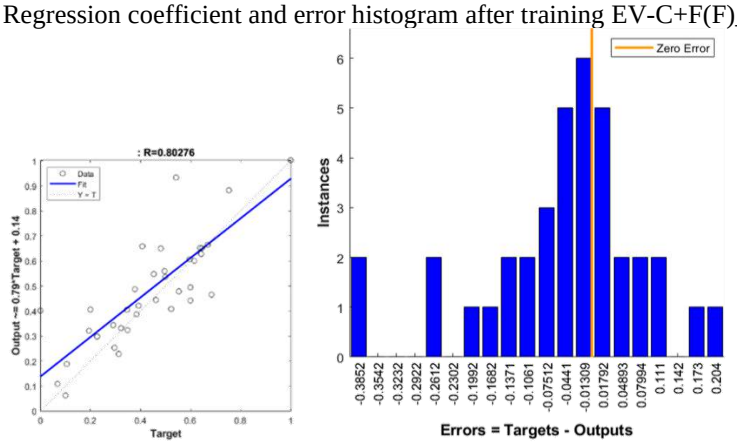

Figure B9.34 Regression coefficient and error histogram after testing EV-C+F(F)_70_10_20-23

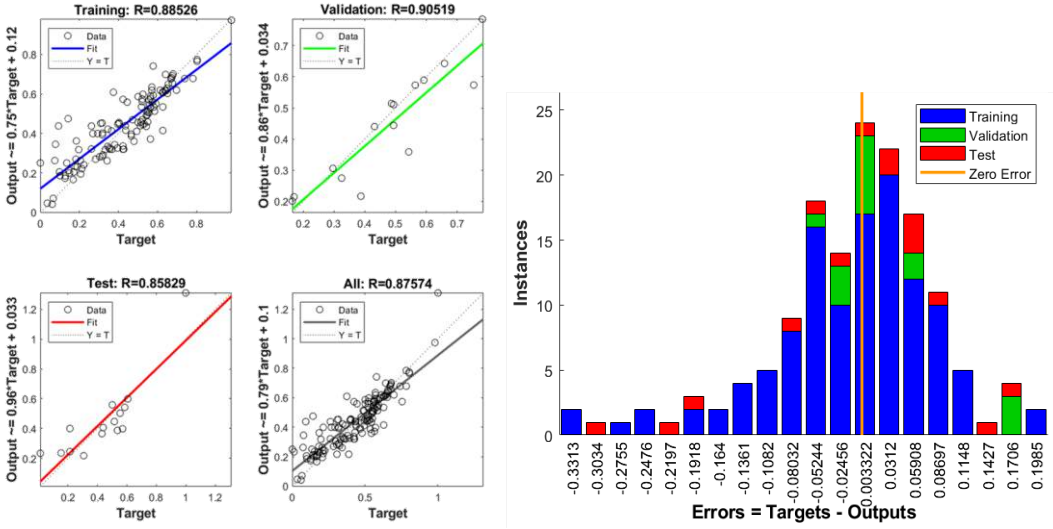

Figure B9.35 Regression coefficient and error histogram after training EV-C+F(F)_80_10_10-23

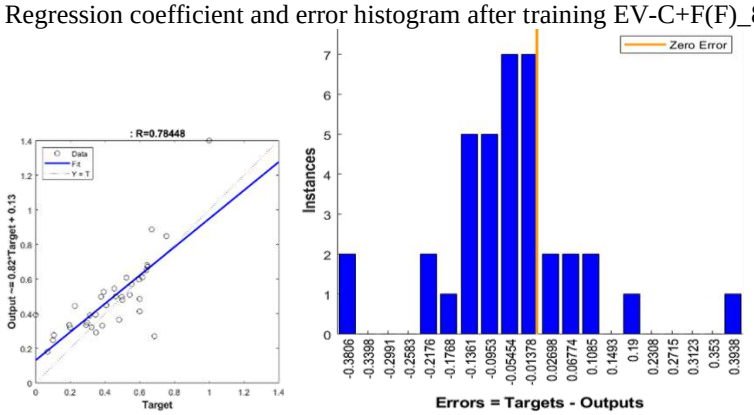

Figure B9.36 Regression coefficient and error histogram after testing EV-C+F(F)_80_10_10-23

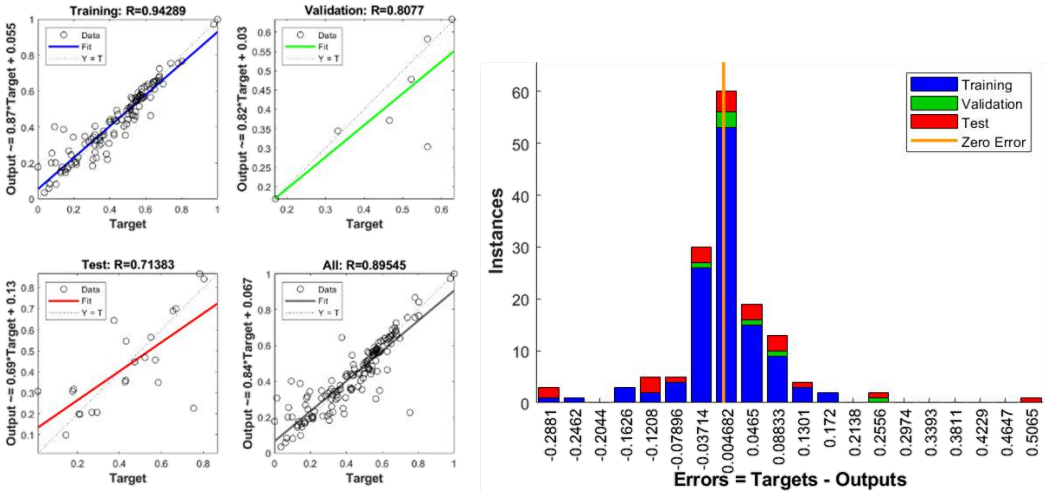

Figure B9.37 Regression coefficient and error histogram after training EV-C+F(F)_80_5_15-23

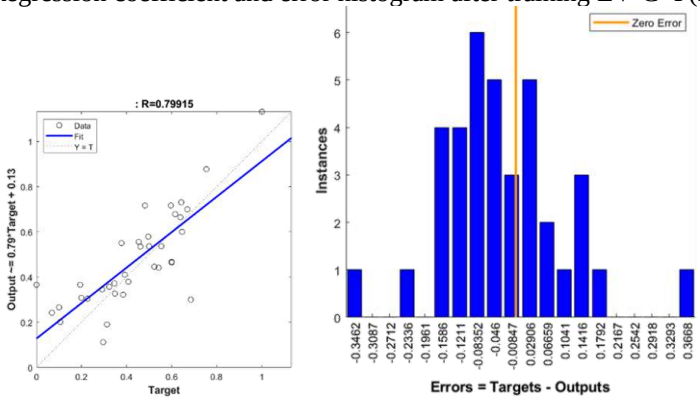

Figure B9.38 Regression coefficient and error histogram after testing EV-C+F(F)_80_5_15-23

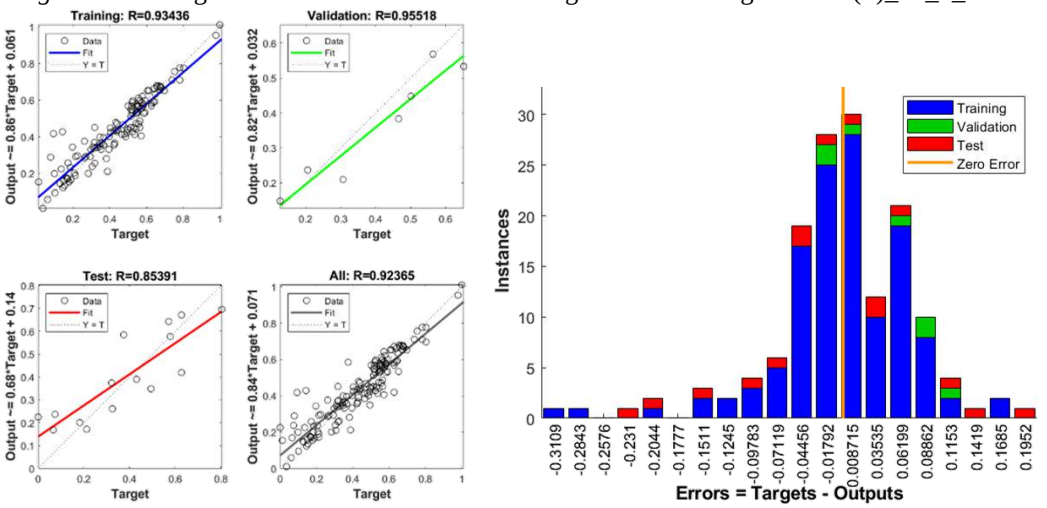

Figure B9.39 Regression coefficient and error histogram after training EV-C+F(F)_85_5_10-11

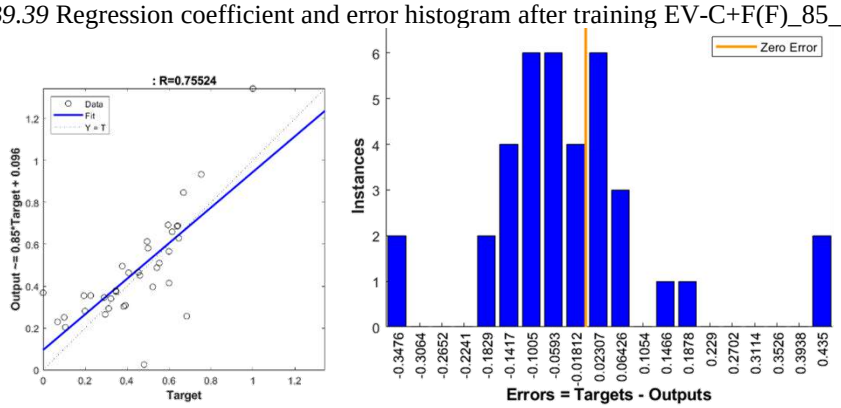

Figure B9.40 Regression coefficient and error histogram after testing EV-C+F(F)_85_5_10-11

Table B9.1 Results for evaluation ANN models based on dataset from Group I

#	Model	Training (80%)						Testing (20%)	
		Regression coefficient - training	Regression coefficient - validation	Regression coefficient - testing	Regression coefficient - total	Mean square error	Epoch	Regression coefficient	Mean square error
1	EV-COMP_70_10_20-41	0.956	0.91395	0.91878	0.93991	0.0035684	10	0.6995	0.02325
2	EV-COMP_80_10_10-60	0.97646	0.90059	0.97778	0.97068	0.0034543	10	0.641	0.02477
3	EV-COMP_80_5_15-20	0.96445	0.93289	0.84344	0.94203	0.0032266	11	0.717	0.0164
4	EV-COMP_85_5_10-41	0.97983	0.98386	0.89288	0.97497	0.00101	38	0.6455	0.0295
5	EV-FLEX_70_10_20-48	0.94445	0.80911	0.85026	0.915	0.01323	14	0.886	0.01385
6	EV-FLEX_80_10_10-48	0.93606	0.88849	0.88083	0.92495	0.005062	14	0.873	0.01281
7	EV-FLEX_80_5_15-16	0.91067	0.91432	0.84429	0.90042	0.0062921	10	0.869	0.01255
8	EV-FLEX_85_5_10-16	0.82552	0.92592	0.85434	0.83336	0.0097763	8	0.898	0.0189
9	EV-C+F_70_10_20-33	0.99186	0.74099	0.78126	0.91828	0.022628	25	0.6658	0.0379
10	EV-C+F_80_10_10-11	0.9006	0.89892	0.85392	0.8954	0.012551	11	0.8098	0.0218
11	EV-C+F_80_5_15-11	0.97767	0.75346	0.84551	0.93631	0.011428	56	0.68652	0.06705
12	EV-C+F_85_5_10-33	0.9652	0.91206	0.92741	0.95713	0.0055437	27	0.81361	0.02378
13	EV-C+F(C)_70_10_20-23	0.99035	0.93642	0.91792	0.97062	0.0071608	16	0.73405	0.05242
14	EV-C+F(C)_80_10_10-33	0.94226	0.91434	0.94932	0.94076	0.0071479	12	0.7946	0.03228
15	EV-C+F(C)_80_5_15-23	0.95989	0.90733	0.90767	0.94425	0.0071872	15	0.5714	0.10445
16	EV-C+F(C)_85_5_10-33	0.94582	0.97081	0.86463	0.93382	0.0072292	14	0.6742	0.06634
17	EV-C+F(F)_70_10_20-23	0.96036	0.74185	0.85222	0.90723	0.023928	22	0.8028	0.01907
18	EV-C+F(F)_80_10_10-23	0.88526	0.90519	0.85829	0.87574	0.0070207	8	0.7845	0.02238
19	EV-C+F(F)_80_5_15-23	0.94289	0.8077	0.71383	0.89545	0.011334	16	0.7992	0.01834
20	EV-C+F(F)_85_5_10-11	0.93436	0.95518	0.85391	0.92365	0.0049388	20	0.7552	0.0256

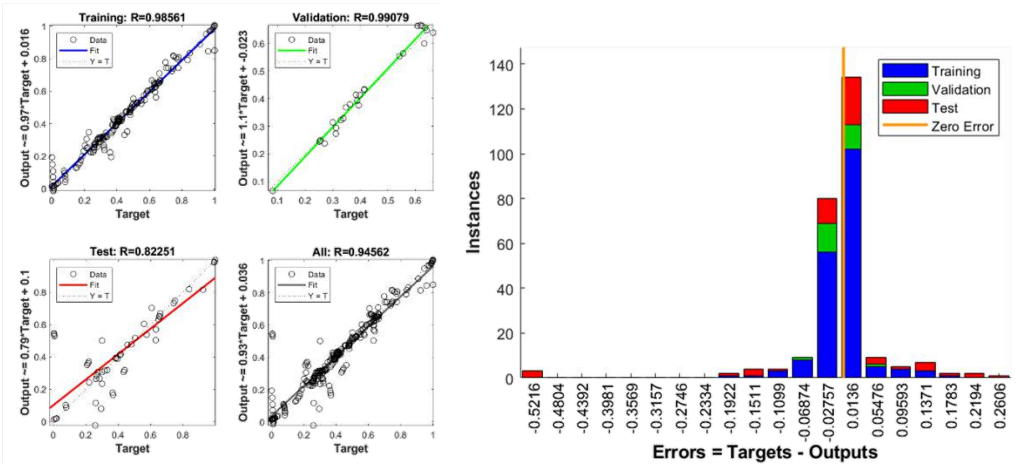

Figure B9.41 Regression coefficient and error histogram after training EV-S_C+F_70_10_20-8

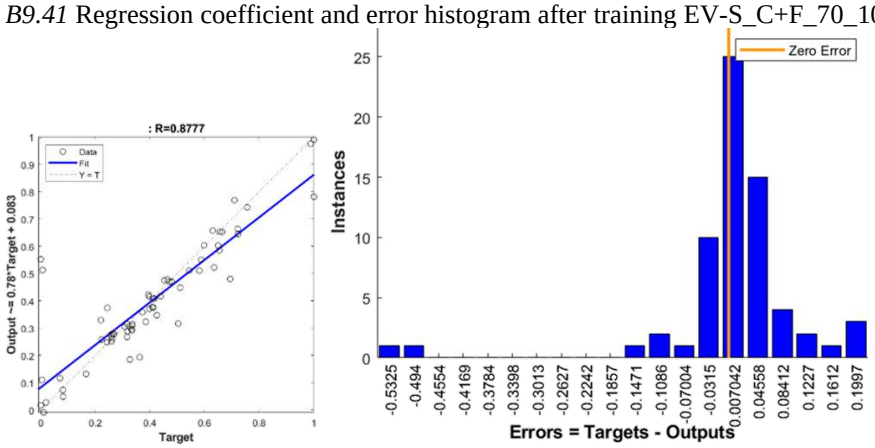

Figure B9.42 Regression coefficient and error histogram after testing EV-S_C+F_70_10_20-8

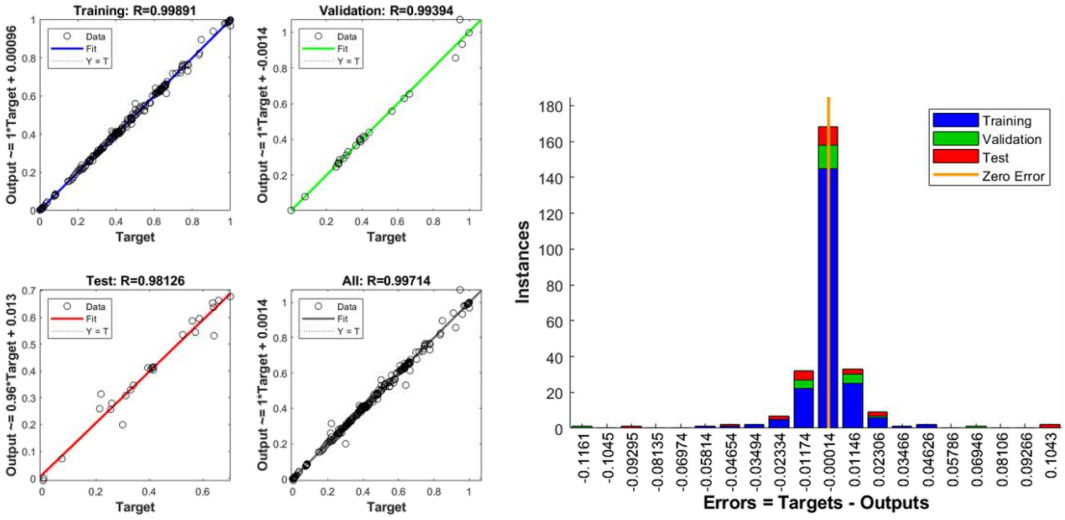

Figure B9.43 Regression coefficient and error histogram after training EV-S_C+F_80_10_10-8

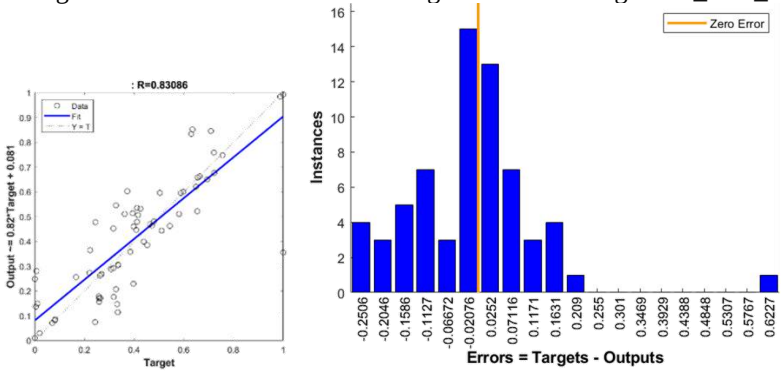

Figure B9.44 Regression coefficient and error histogram after testing EV-S_C+F_80_10_10-8

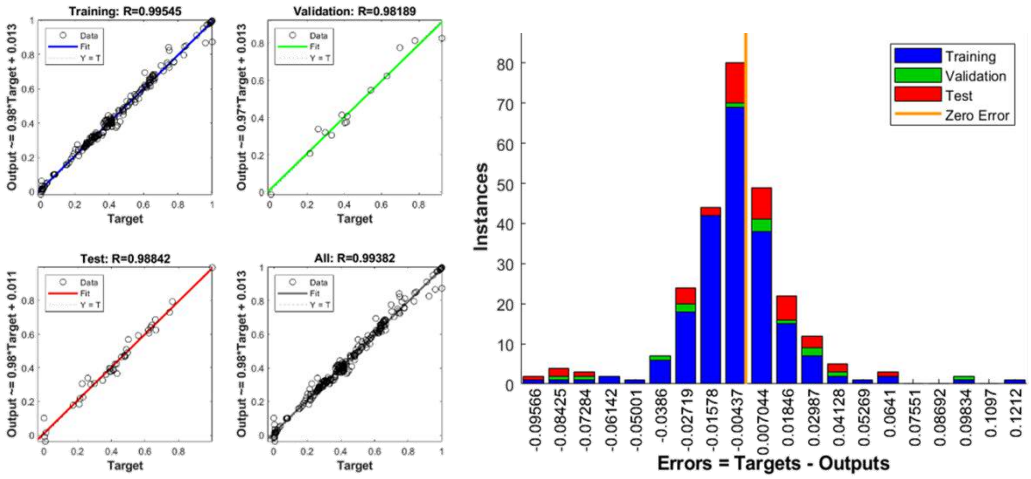

Figure B9.45 Regression coefficient and error histogram after training EV-S_C+F_80_5_15-17

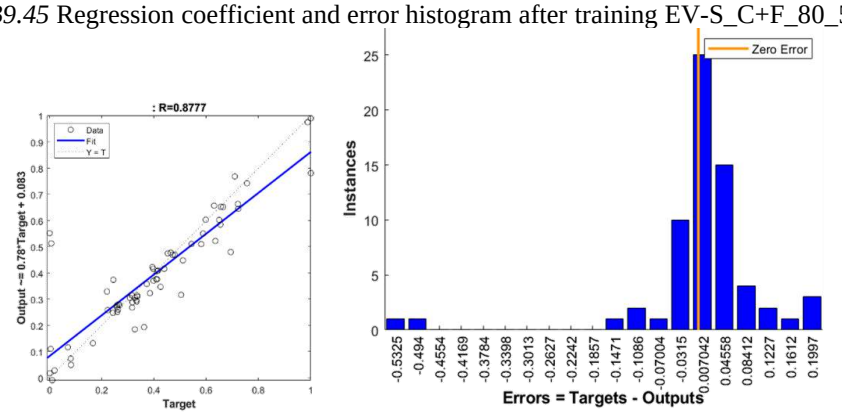

Figure B9.46 Regression coefficient and error histogram after testing EV-S_C+F_80_5_15-17

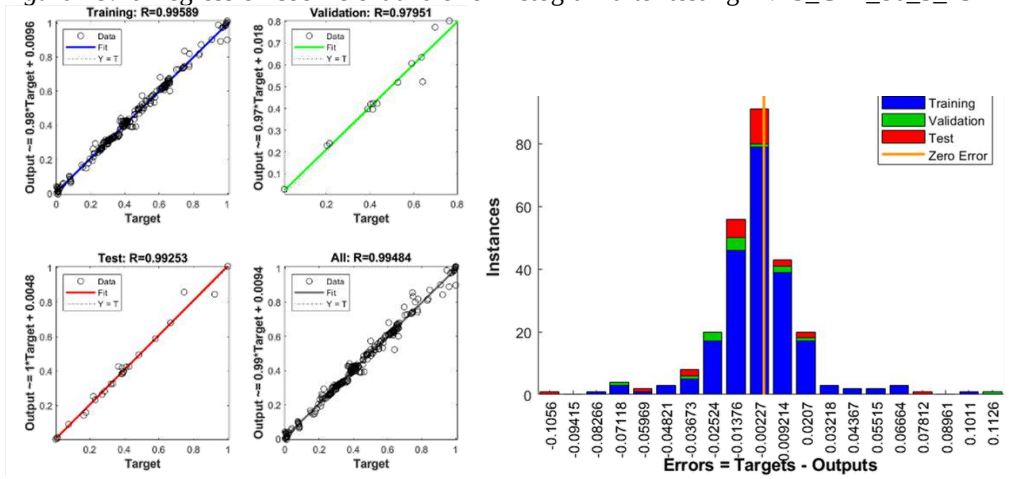

Figure B9.47 Regression coefficient and error histogram after training EV-S_C+F_85_5_10-17

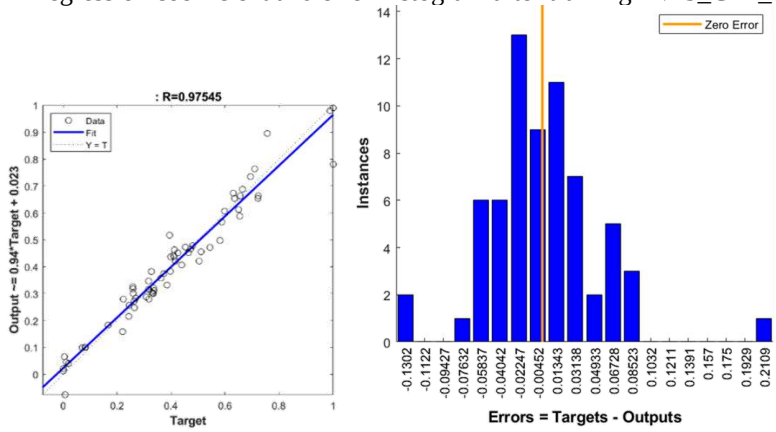

Figure B9.48 Regression coefficient and error histogram after testing EV-S_C+F_85_5_10-17

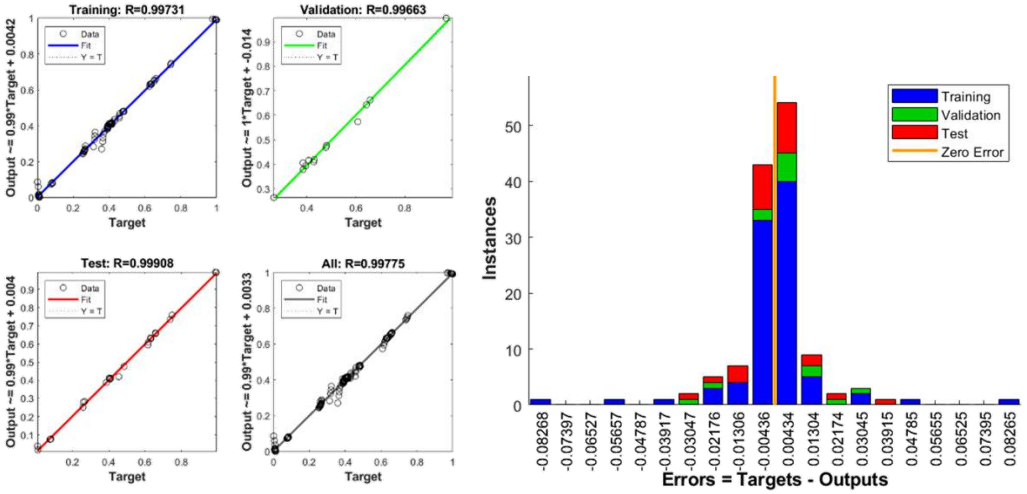

Figure B9.49 Regression coefficient and error histogram after training EV-S_C+F(C)_70_10_20-17

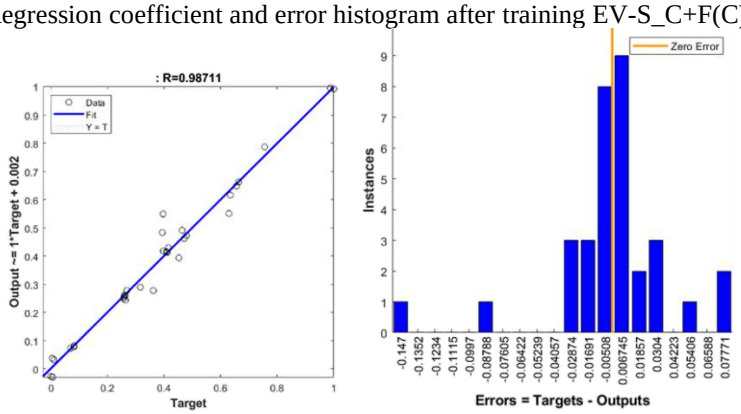

Figure B9.50 Regression coefficient and error histogram after testing EV-S_C+F(C)_70_10_20-17

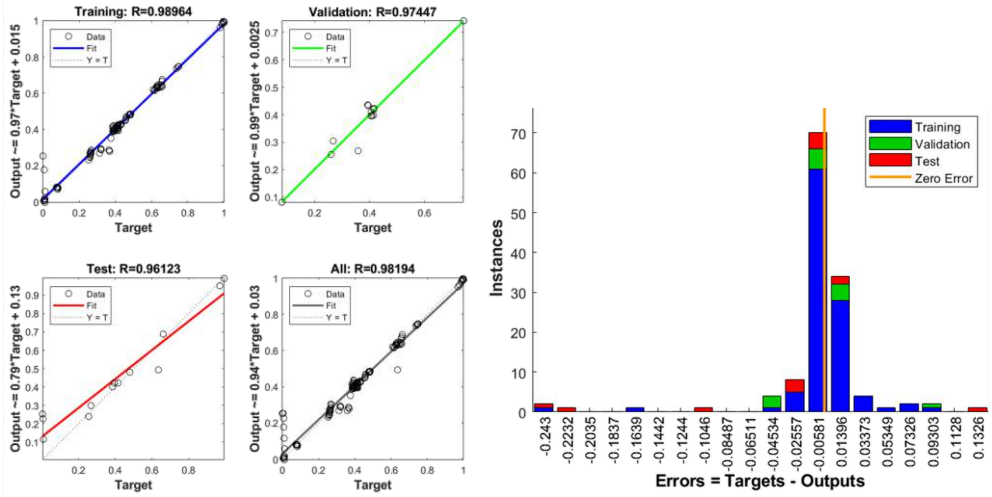

Figure B9.51 Regression coefficient and error histogram after training EV-S_C+F(C)_80_10_10-17

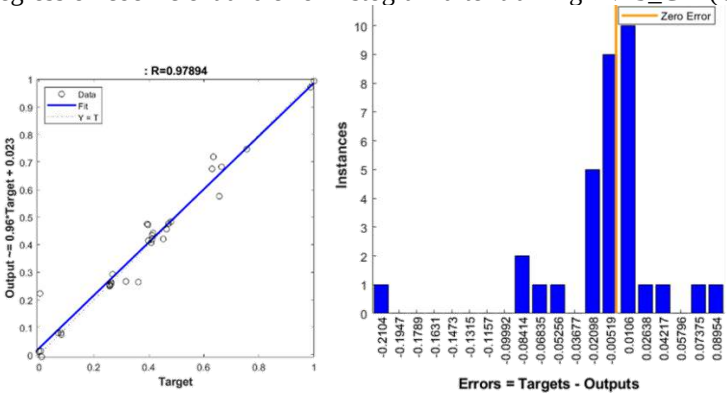

Figure B9.52 Regression coefficient and error histogram after testing EV-S_C+F(C)_80_10_10-17

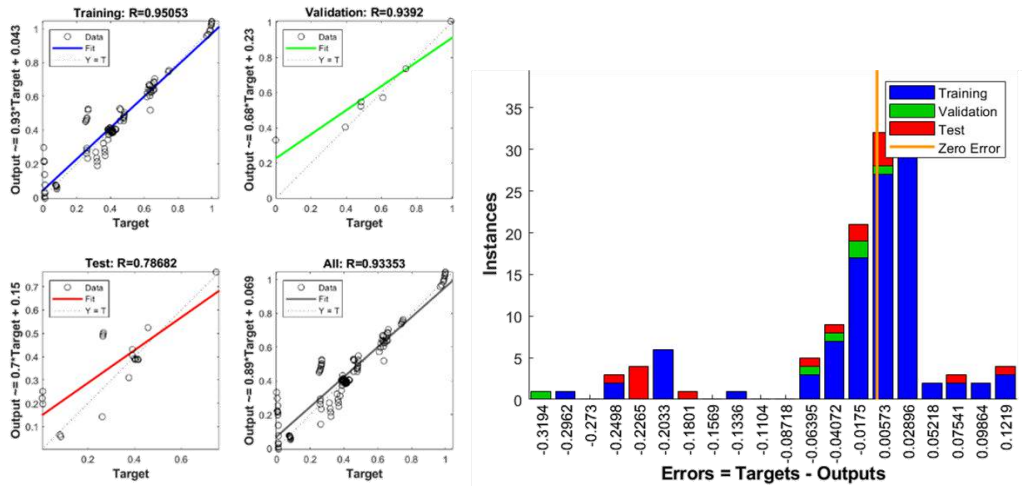

Figure B9.53 Regression coefficient and error histogram after testing EV-S_C+F(C)_80_5_15-8

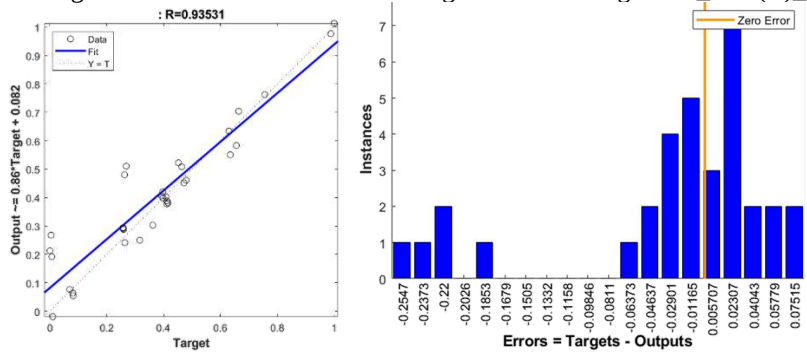

Figure B9.54 Regression coefficient and error histogram after training EV-S_C+F(C)_80_5_15-8

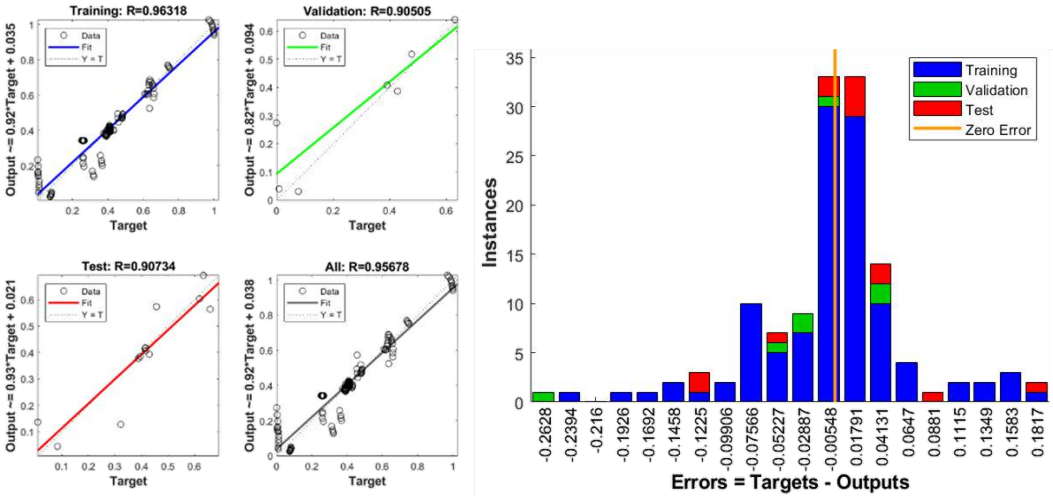

Figure B9.55 Regression coefficient and error histogram after testing EV-S_C+F(C)_85_5_10-8

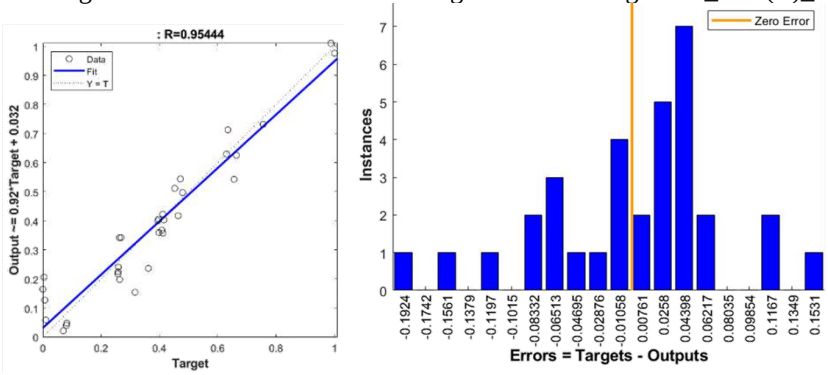

Figure B9.56 Regression coefficient and error histogram after testing EV-S_C+F(C)_85_5_10-8

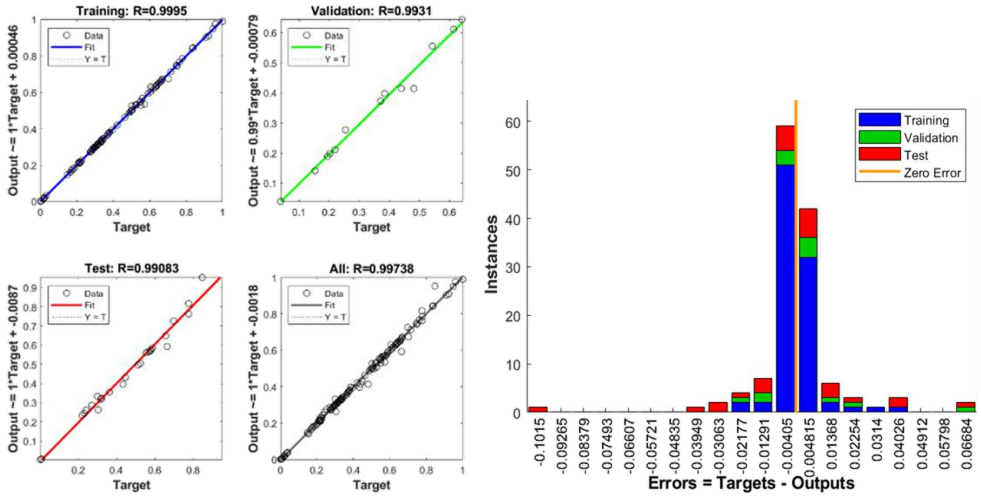

Figure B9.57 Regression coefficient and error histogram after training EV-S_C+F(F)_70_10_20-17

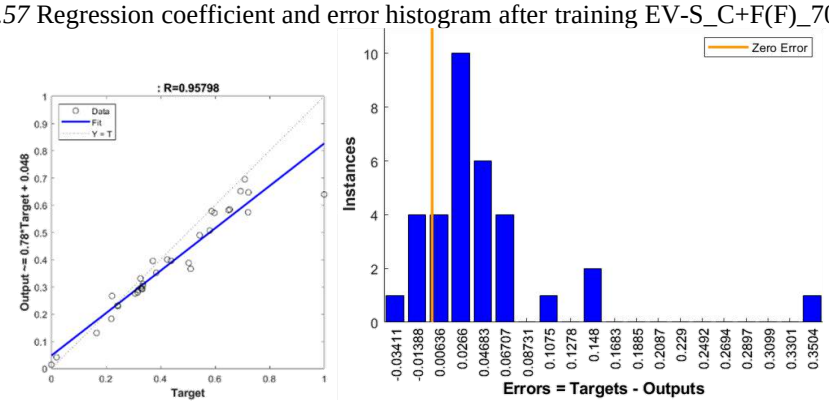

Figure B9.58 Regression coefficient and error histogram after testing EV-S_C+F(F)_70_10_20-17

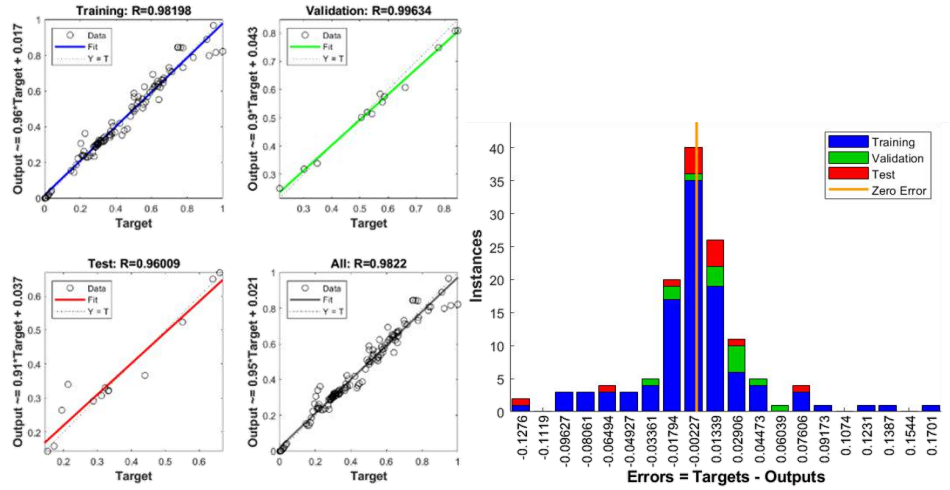

Figure B9.59 Regression coefficient and error histogram after training EV-S_C+F(F)_80_10_10-8

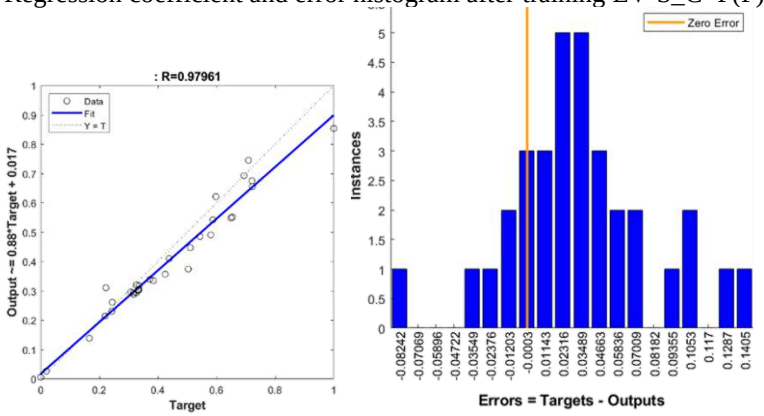

Figure B9.60 Regression coefficient and error histogram after testing EV-S_C+F(F)_80_10_10-8

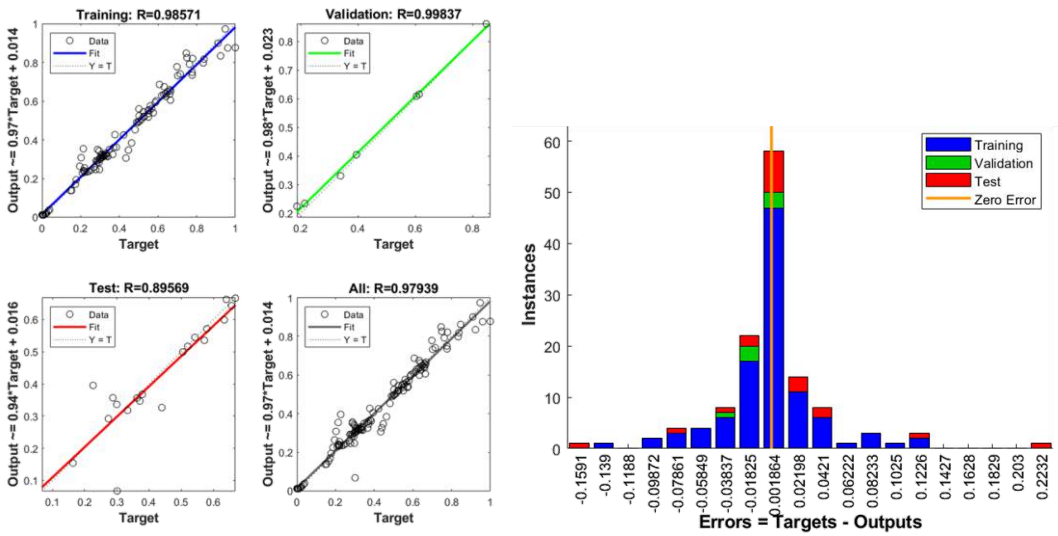

Figure B9.61 Regression coefficient and error histogram after training EV-S_C+F(F)_80_5_15-8

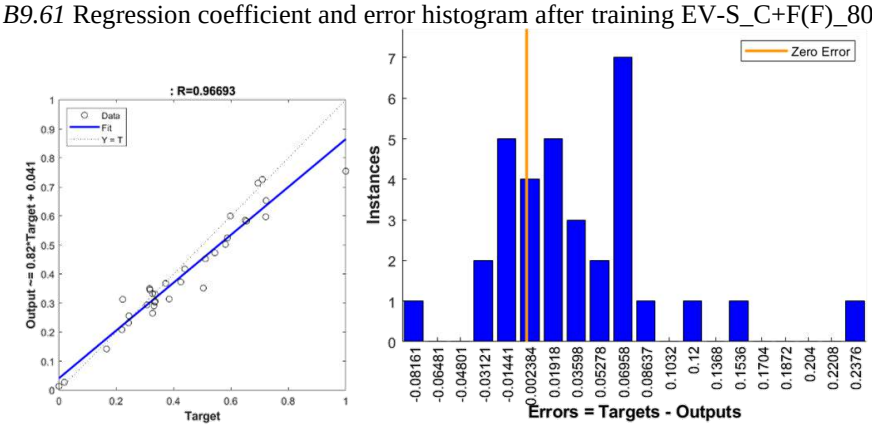

Figure B9.62 Regression coefficient and error histogram after testing EV-S_C+F(F)_80_5_15-8

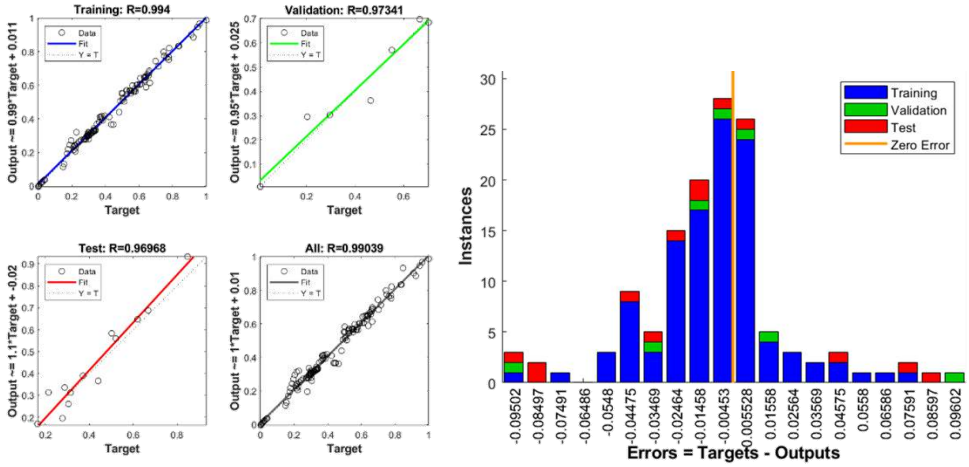

Figure B9.63 Regression coefficient and error histogram after training EV-S_C+F(F)_85_5_10-8

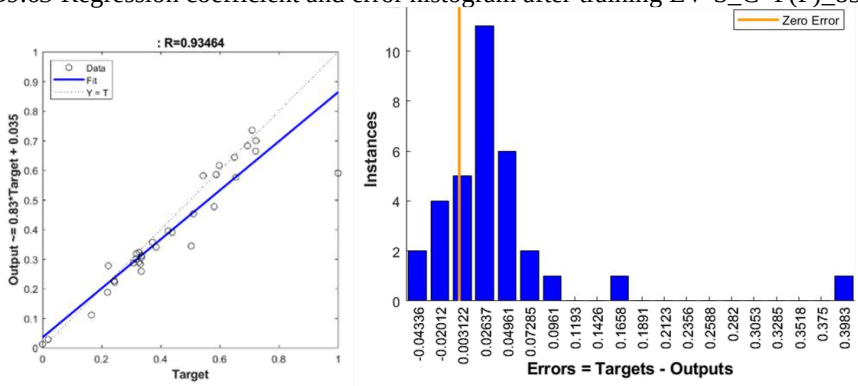

Figure B9.64 Regression coefficient and error histogram after testing EV-S_C+F(F)_85_5_10-8

Table B9.2 Results for evaluation ANN models based on dataset from Group II

#	Model	Training (80%)						Testing (20%)	
		Regression coefficient - training	Regression coefficient - validation	Regression coefficient - testing	Regression coefficient - total	Mean square error	Epoch	Regression coefficient	Mean square error
1	EV-S_C+F_70_10_20-8	0.98561	0.99079	0.82251	0.94562	0.0016205	30	0.8957	0.01294
2	EV-S_C+F_80_10_10-8	0.99891	0.99394	0.98126	0.99714	0.0001238	104	0.8222	0.01889
3	EV-S_C+F_80_5_15-17	0.99545	0.98189	0.98842	0.99382	0.0005492	47	0.9806	0.00273
4	EV-S_C+F_85_5_10-17	0.99589	0.97951	0.99253	0.99484	0.0004696	36	0.9765	0.00422
5	EV-S_C+F(C)_70_10_20-17	0.99731	0.99663	0.99908	0.99775	0.0003804	34	0.9871	0.0017
6	EV-SC+F(C)_80_10_10-17	0.98964	0.97447	0.96123	0.98194	0.001232	18	0.9789	0.0028
7	EV-S_C+F(C)_80_5_15-8	0.95053	0.9392	0.78682	0.93353	0.005928	14	0.93531	0.00892
8	EV-S_C+F(C)_85_5_10-8	0.96318	0.90505	0.90734	0.95678	0.004469	14	0.9544	0.00578
9	EV-S_C+F(F)_70_10_20-17	0.9995	0.9931	0.99083	0.99738	0.0000548	97	0.958	0.00697
10	EV-S_C+F(F)_80_10_10-8	0.98198	0.99634	0.96009	0.9822	0.001962	19	0.9796	0.00329
11	EV-S_C+F(F)_80_5_15-8	0.98571	0.99837	0.89569	0.97939	0.00165	18	0.9669	0.00483
12	EV-S_C+F(F)_85_5_10-8	0.994	0.97341	0.96968	0.99039	0.000704	53	0.9346	0.00741

B10. Results – Sensitivity analysis

Table B10.1 Weights and bias for model COMP from Group I

w1																			
1.45	2.10	4.05	0.89	2.20	-4.74	1.93	0.66	2.62	0.08	0.70	-0.22	-1.56	-0.16	0.19	-0.27	-0.83	-0.04	-0.08	-0.98
0.49	1.05	0.96	-0.08	-0.77	-2.61	0.79	0.57	1.32	-0.21	0.22	0.01	0.44	-0.18	-0.14	0.43	0.19	-0.45	-0.04	0.55
0.50	0.13	1.04	0.58	-3.22	8.56	0.47	0.75	0.65	-0.59	-1.71	0.02	-0.12	-1.36	-0.20	0.03	-0.11	0.46	0.20	-0.75
0.43	-0.05	0.05	-0.61	0.20	-0.21	2.02	-0.16	-0.84	-0.17	0.15	0.68	-0.89	-0.87	-0.06	-0.27	0.26	-0.41	0.26	0.93
2.24	0.61	1.25	-0.48	-0.28	1.80	0.22	0.03	1.05	-0.37	-0.16	0.43	-0.76	0.59	-0.08	0.14	0.19	-0.36	-0.17	0.54
-0.66	-0.78	0.31	0.11	0.07	-0.39	0.38	0.09	-0.22	-0.18	-0.94	-0.21	0.22	0.27	-0.26	-0.13	-0.59	0.60	-0.57	-0.61
2.03	1.96	-2.28	-0.42	2.49	-13.13	-1.92	3.35	5.55	0.77	2.05	1.33	4.65	1.55	-3.08	-1.34	-1.93	-0.82	0.08	-0.27
-2.17	1.77	1.52	0.17	-3.07	2.19	0.22	-1.29	-0.37	0.49	-0.03	1.14	-0.62	-1.07	0.71	0.36	-0.41	1.55	-0.30	0.30
-0.87	-0.74	-1.82	0.46	0.02	-4.10	1.14	0.00	-0.72	-0.68	-1.78	0.90	1.58	-0.11	-0.10	0.15	-0.12	0.54	0.75	-2.46
-0.95	-0.74	0.52	-0.17	-1.24	-1.64	-0.70	-0.18	0.35	0.02	0.71	0.15	0.51	1.83	0.11	0.14	0.14	-1.00	0.46	3.14
-0.10	0.46	-0.35	-0.44	-0.28	0.62	-0.43	-0.36	-0.50	-0.58	-0.13	-0.31	-0.41	-0.58	0.01	-0.40	0.15	-0.04	0.23	0.43
-1.21	1.84	-1.39	-1.06	-0.16	-1.99	0.02	-0.02	1.20	1.13	-0.74	0.01	0.28	0.82	0.06	0.79	0.73	0.49	0.50	-2.73
1.53	2.93	-1.35	0.56	0.34	5.50	-1.24	0.97	-0.78	-0.89	-1.26	-0.11	1.77	0.16	0.46	-0.18	-0.51	1.07	-0.08	-1.30
-1.98	-0.95	0.57	0.69	3.03	6.94	-1.73	-0.62	-0.05	-1.16	-1.53	0.96	0.48	-1.04	-0.80	-0.35	-2.16	-1.20	-1.28	0.14
-0.05	0.51	-0.68	-0.47	0.96	1.56	1.18	1.06	1.53	0.09	0.27	-0.11	-0.16	-1.19	0.75	-0.02	0.13	0.62	0.54	-4.99
0.93	2.11	0.84	-0.57	-0.48	-3.29	-0.09	0.50	0.11	-0.63	-0.92	-0.39	-0.13	0.39	-0.03	0.27	-0.26	-0.29	-0.50	1.01
-0.60	0.68	0.86	0.09	-0.89	0.76	-1.97	1.06	-0.27	0.70	0.05	0.10	0.42	-0.23	-0.84	0.12	-0.42	-0.19	-0.19	1.33
-2.65	-2.05	-2.38	0.10	2.18	3.06	-0.88	0.19	0.64	-0.84	-2.38	0.28	1.36	-0.51	-0.78	-0.67	-0.86	-0.23	-0.63	-0.58
-0.43	-0.38	-0.26	-0.02	2.69	4.98	-1.37	1.73	-1.65	-0.75	-0.56	-1.07	1.05	-0.33	-1.76	-0.21	-0.17	-0.67	-0.20	1.00
1.44	1.70	0.45	0.57	-3.11	6.56	0.28	-0.95	-0.22	-0.16	-0.08	-0.55	0.51	-2.37	-0.89	0.10	-0.36	-0.92	-0.54	-0.66
-1.93	-1.85	2.28	-0.74	-0.36	-0.15	0.58	-0.43	0.53	-0.37	0.96	-0.45	-0.49	-0.18	0.29	-0.83	-0.51	-0.62	0.22	1.01
0.45	0.30	-0.68	0.64	1.65	-2.33	-1.76	-0.68	0.01	0.49	0.16	-0.17	0.80	-0.20	0.89	-0.36	-0.61	-0.44	0.17	-0.56
-2.96	-1.01	-1.20	-1.19	0.24	1.39	0.15	1.05	0.88	-0.44	-0.34	0.23	0.71	-0.74	-1.16	-0.08	0.29	0.00	-0.29	2.79
3.31	1.34	1.07	1.59	-0.96	7.87	0.27	0.33	-1.07	-0.34	-1.14	-0.82	-0.65	0.40	-1.42	-0.13	-0.61	-0.37	-1.19	-6.71
0.22	-0.73	0.78	0.16	-1.68	0.89	-0.83	0.28	0.62	-0.52	0.22	0.35	0.92	0.65	-0.48	-0.02	0.64	-0.09	-0.51	-1.31
0.80	1.53	-1.45	-0.86	-1.64	0.97	0.43	-1.40	-1.16	-0.21	0.38	0.16	-1.07	0.58	0.72	-0.78	-0.28	-0.84	0.19	-1.23
-0.60	-0.36	-0.59	-0.48	0.76	2.55	-0.64	-0.53	1.14	-0.99	-0.27	0.04	-0.16	0.82	-1.38	-1.71	-0.09	-1.04	-0.18	3.77
-2.18	-1.56	2.33	0.15	-2.43	7.49	-1.19	0.15	-1.90	-0.44	0.87	1.39	-4.06	-0.05	2.65	0.47	-0.14	0.04	-0.76	3.47
0.57	2.59	2.06	0.96	3.44	7.78	-2.00	-0.12	0.66	-1.49	0.23	0.45	-0.66	-0.78	-0.75	-1.50	-1.62	-1.32	-0.98	0.59
0.33	-0.16	-2.11	-0.39	-0.80	5.37	-1.29	0.87	0.20	-0.52	0.16	0.94	0.01	-1.36	-1.58	0.02	-0.03	0.57	0.42	0.30
-1.63	0.46	0.80	-0.20	-3.95	0.76	-1.94	0.76	0.39	0.42	-1.97	0.13	-0.65	0.65	1.36	0.98	1.01	1.02	0.50	2.68

b1															
-1.4892	-1.7065	2.1388	-1.0599	-1.1131	1.1059	-1.646	0.6807	0.4672	0.5155	0.5648	-0.0146	-0.1939	1.2575	-0.3828
0.1237	-0.22	0.2894	0.0433	1.1382	-0.401	-0.6888	-0.5702	1.4167	0.9006	1.2206	1.5342	2.6611	1.7775	-2.189

w2														
2.9125	2.5174	-4.3277	-1.9946	2.916	-1.0941	-5.9358	4.9758	3.2575	3.9558	0.1834	-4.2854	3.3721	5.0374	3.6591
3.4051	-0.7486	-4.2521	5.4535	-5.2974	-3.9373	-3.1591	-4.1178	2.7175	2.705	-2.9014	4.7066	-2.9845	4.8757	-3.661

b2
-0.2259

Table B10.2 Weights and bias for model FLEX from Group I

w1															
-0.11	0.10	0.35	-0.26	0.82	-0.53	0.36	0.74	0.87	-0.12	-0.37	-0.27	0.58	-0.81	-0.02	-0.45
0.06	-0.50	1.95	1.11	-0.47	-2.79	1.60	-0.09	0.58	0.39	0.80	-0.64	0.68	1.22	0.40	-1.59
-0.24	1.59	2.22	-0.54	-0.44	-4.59	0.73	-1.22	0.20	0.40	0.01	0.57	-0.49	0.77	-0.49	0.34
1.02	-0.56	0.17	0.75	-0.03	-2.28	0.21	-0.30	0.46	0.62	-0.57	0.19	0.03	0.72	-0.68	-1.11
-1.06	0.23	-1.34	1.03	-2.75	-4.05	-1.50	-0.52	1.41	0.43	1.25	-0.79	0.73	0.38	0.24	1.17
-0.27	-0.96	-0.38	0.19	0.50	-0.39	-0.29	-0.80	-0.25	0.47	0.38	-0.38	-0.73	-0.39	0.12	-0.22
-0.16	0.06	-1.88	1.02	0.01	0.92	-0.12	0.34	-0.57	-0.88	0.15	-1.34	0.15	-0.14	-0.54	-2.09
1.99	-1.37	0.36	-1.18	1.72	1.88	-0.94	0.89	0.39	-1.15	0.74	0.00	-0.17	0.25	-0.80	-1.16
-0.01	0.29	9.73	1.00	1.96	7.39	-0.70	-1.53	-0.65	-1.30	-1.47	-0.71	-1.26	0.03	-0.50	0.36
-0.38	1.46	-2.18	0.05	-1.94	1.36	-0.39	0.28	-0.28	-0.01	-0.30	0.24	0.80	-0.29	-0.55	1.51
0.63	3.21	-0.04	0.10	-0.99	0.47	-3.76	3.65	0.49	0.23	-0.26	0.55	-0.21	0.97	1.22	3.48
0.36	-1.21	-0.13	-0.79	-0.61	-1.91	1.04	-0.48	-0.68	0.32	-0.08	1.05	0.81	-1.27	-0.28	2.61
2.70	-0.11	-0.48	0.68	-0.91	0.64	1.52	0.76	0.42	0.10	-1.59	0.03	-0.12	1.41	1.11	-3.15
-0.33	-0.22	-1.19	-0.32	-1.64	-3.42	-0.47	-1.23	0.04	0.78	0.30	-0.05	-0.13	0.27	-0.15	-0.16
1.63	2.05	-2.12	0.99	0.73	-2.18	-1.43	0.33	-1.21	-0.33	0.69	0.27	0.07	-0.04	0.19	2.19
-2.41	-0.77	5.23	1.03	1.12	3.67	1.62	-0.35	0.95	-0.04	-0.30	0.34	-0.20	0.46	-0.18	-1.41
-1.24	1.91	1.09	0.03	-0.03	1.41	-0.72	-1.95	-0.46	-0.27	-0.44	0.06	-0.25	0.07	-0.04	2.96
1.16	-2.20	0.08	-0.21	-1.44	0.59	1.65	-0.18	0.10	0.76	-0.29	1.02	-0.06	-0.47	-0.40	2.14
0.36	-0.26	0.09	0.71	0.56	-0.29	-0.11	0.62	0.84	0.67	0.26	0.56	0.10	0.08	0.55	0.48
-0.65	0.86	0.44	-0.16	-0.78	-1.64	-1.63	1.70	-0.09	-0.09	0.59	0.76	0.10	0.01	-0.49	-1.77
-3.99	-5.56	-0.11	1.69	1.70	7.07	1.06	1.66	-1.11	-0.13	-0.86	0.91	-0.13	-1.19	0.69	-0.26
-0.51	0.11	-0.31	-0.77	-0.56	0.39	0.60	-0.05	-0.16	-0.51	0.37	-0.31	0.41	0.31	0.55	-0.13
2.98	0.19	0.71	0.22	1.21	1.28	0.46	2.35	0.93	0.56	-1.35	0.02	0.46	0.10	-0.29	0.12
0.92	-1.06	-1.19	-2.13	2.52	5.47	-0.86	-1.44	-1.32	-1.50	-2.20	-0.05	0.26	1.03	-0.74	-0.57
-0.56	2.17	4.32	0.35	-3.65	6.27	-0.42	-2.21	-2.10	-0.73	0.75	-1.20	-1.20	0.09	-1.28	-0.10
0.00	-0.59	0.48	-0.59	-0.37	0.47	0.47	-0.52	-0.33	-0.01	0.49	0.33	0.84	-0.43	0.62	0.43
-1.45	2.10	-0.56	1.75	-1.53	-2.55	0.27	0.28	-0.72	-0.66	0.38	0.41	1.30	0.75	-0.03	-0.73
-1.86	1.02	-0.31	1.39	-0.09	-3.00	-1.76	-0.56	-1.39	0.67	-0.28	0.82	0.47	0.99	0.66	-1.20
-0.25	0.54	0.22	-0.07	0.60	0.67	0.33	-0.34	-0.62	-0.11	-0.14	-0.17	0.37	0.78	0.19	0.58
4.73	4.17	2.67	-0.22	1.03	-8.62	-0.25	-2.86	1.85	1.04	-1.24	1.63	0.21	0.04	0.74	-1.11
b1															
-1.572	1.028	1.288	1.300	0.57	-1.054	-0.84	-0.424	2.595	-1.073	-1.178	-0.81	-0.56	-0.345	-0.383	
0.6332	0.142	0.397	0.365	-0.76	-0.23	-0.9	0.972	1.633	-0.584	1.075	-1.865	-2.42	-1.722	1.039	
w2															
1.8925	-2.689	3.564	2.015	-2.712	0.733	-2.55	-2.296	5.68	2.919	-4.175	-2.481	-3.135	-3.2163	-2.892	
-3.627	-3.33	3.437	0.941	2.237	-5.84	0.80	2.580	3.966	-6.22	0.24	5.116	-2.954	1.2523	-3.292	
b2															
-1.5203															

Table B10.3 Weights and bias for model COMP+FLEX from Group I

w1										
0.91	-1.44	-2.77	3.26	-6.06	-0.08	2.41	-0.63	-2.30	1.06	-2.45
-3.37	0.35	2.23	3.17	3.26	0.24	-1.06	3.34	0.96	-1.84	-3.31
-1.07	-5.35	-0.76	-0.75	2.45	0.57	-2.07	3.97	-0.26	-4.75	11.09
-0.57	-1.10	-1.63	-1.33	0.26	-0.26	-0.99	-3.61	1.34	-1.87	1.70
5.40	-3.39	2.47	0.00	-2.24	7.60	-1.23	-0.28	-3.04	-1.12	-0.39
-3.36	-5.70	0.15	4.88	-3.62	5.29	-1.86	-3.46	-0.01	-0.07	5.83
-0.34	-2.06	2.93	3.12	-3.12	4.88	0.11	1.22	-0.38	-2.69	-1.00
-3.13	-5.21	-5.16	0.19	-0.81	3.41	-1.38	-0.25	1.76	-0.66	0.03
1.68	3.95	-3.65	-2.03	1.91	-4.18	0.25	-5.55	6.12	-1.10	-0.26
-3.40	4.02	0.00	-1.67	-1.06	0.76	-1.50	-0.04	-0.09	0.22	-1.72
-2.21	-5.13	-3.03	2.30	2.21	-0.11	-2.28	2.49	1.58	-3.31	7.44
-11.39	-15.79	-7.81	-6.27	2.34	-10.89	6.42	9.17	-1.51	2.06	-0.25
1.19	-1.28	-0.23	1.28	5.79	1.16	-5.66	-4.43	-1.37	-0.85	-6.83
8.59	5.66	1.05	1.68	0.29	7.59	1.48	4.78	-11.60	-0.93	-0.35
-0.14	-1.90	-3.90	-1.26	1.09	-5.76	0.04	0.98	-3.11	4.56	0.06
0.97	1.98	5.46	0.75	-1.33	-8.44	0.96	-0.10	10.71	-3.61	0.30
-4.18	-4.71	10.15	2.28	-4.00	6.29	6.14	3.77	-3.95	4.69	-0.23
-3.02	-0.55	-4.55	-2.05	1.04	-0.14	-2.02	0.79	-0.92	1.31	-3.31
-4.45	2.87	-0.70	0.07	-3.23	-0.85	0.85	3.16	0.66	0.01	0.69
-1.91	2.07	3.09	-0.33	0.58	-3.48	-1.71	0.50	-0.90	0.29	-0.14
-3.17	-6.13	-4.69	3.17	-4.40	4.01	-1.27	4.54	2.23	1.23	0.08
3.63	-0.42	-2.22	-4.68	-2.26	-0.24	1.32	-6.44	-0.72	-2.89	3.25
10.32	-5.49	-0.98	3.80	10.87	30.76	-0.78	1.66	21.57	0.08	0.34
-0.63	2.74	2.40	1.40	-2.73	7.61	2.13	0.49	-9.15	0.73	-0.23
b1										
0.8635	2.5439	4.6607	1.4773	-1.0019	-1.7198	1.8923	1.2242	0.3735	-1.023	3.3363
-8.8828	-0.2786	0.9722	-5.1459	0.9158	-4.8249	-4.3672	-1.9168	0.3957	-2.7919	2.5415
2.729	-2.6959									
w2										
3.05	-6.56	-0.71	2.49	-1.54	-0.11	-3.27	6.92	6.81	-2.88	2.90
-1.76	0.03	1.53	0.09	0.06	1.59	-1.85	-1.07	-2.45	-7.10	-9.57
-0.86	-1.35	-6.09	10.18	-0.80	-8.00	7.84	-1.15	1.76	5.17	-4.20
-1.87	1.26	-9.23								
b2										
2.2647	-6.2974									

Table B10.4 Weights and bias for model RESIST from Group I

w1																
-0.75	0.44	0.59	-0.55	0.44	-0.27	-0.30	0.45	-0.25	0.26	0.26	-0.54	-0.68	-0.14	0.11	0.13	-0.09
1.08	-0.61	0.81	1.41	0.18	-2.08	-3.86	-0.67	-0.20	-0.38	0.76	0.89	-1.10	1.51	1.10	0.27	0.43
0.28	-1.14	0.99	-0.05	-0.52	1.42	-0.16	-0.42	-0.02	0.32	-0.13	-0.60	0.47	-0.18	0.51	1.41	-0.18
-0.42	0.40	-0.09	-0.62	0.11	0.71	0.11	0.28	-0.48	-0.20	0.50	0.22	0.53	-0.73	-0.62	0.38	0.52
0.70	0.56	-0.78	-0.33	0.32	-1.18	-0.50	0.18	0.69	-0.16	0.57	0.09	0.25	-0.36	-0.08	-0.54	0.49
-0.55	-0.89	-0.02	0.32	-0.36	-2.26	-1.45	-1.48	-0.58	0.46	-0.53	0.76	-0.82	1.07	-0.28	-0.45	0.01
-1.06	-0.75	1.52	-0.09	0.60	1.30	0.93	-0.39	0.11	-0.41	-0.30	-0.34	0.12	0.68	-0.01	-0.71	-0.27
1.49	1.89	1.10	3.18	1.42	-11.15	-13.22	-3.80	0.04	3.78	4.13	2.50	1.07	6.28	1.64	2.19	-0.89
1.10	-0.68	1.61	1.10	1.04	-1.50	-0.79	-0.37	-0.56	0.90	-0.71	0.56	-0.29	-0.30	-0.73	0.26	-0.96
0.17	-0.27	-0.21	0.06	0.06	0.46	0.87	-0.19	-0.45	-0.38	0.09	0.70	-0.47	0.49	0.80	0.56	-0.18
0.40	0.74	-0.44	1.02	-0.36	0.00	-0.67	-0.41	-0.29	0.11	-0.27	-0.50	0.04	-0.46	-0.34	0.14	0.15
-0.26	-0.74	0.44	0.11	-0.51	-0.95	-1.50	-0.56	-0.07	0.86	-0.64	0.45	1.92	0.53	0.54	0.24	-0.46
0.49	-0.40	-0.29	-0.66	0.04	0.48	0.96	0.47	-0.57	-0.52	0.14	0.75	-0.05	0.30	-0.17	-1.00	0.61
0.37	1.22	-0.71	-0.55	-0.40	2.33	2.83	0.20	0.36	0.57	0.25	1.37	-1.60	-0.60	0.28	-0.70	-0.20
-0.64	-0.22	-0.95	1.23	1.26	-1.22	-2.87	-1.08	-0.52	1.31	0.44	0.19	-0.54	0.04	0.77	0.63	-1.05
-0.56	-0.94	0.21	0.24	-0.83	-1.03	-0.80	-0.79	-0.87	0.42	-1.33	0.50	0.23	-0.15	0.25	0.30	-0.03
0.53	0.25	-0.87	0.07	0.96	-1.37	-1.01	-1.43	-0.68	0.04	-0.15	0.06	0.62	0.97	0.08	-0.67	-0.15
-0.62	-1.02	0.79	0.55	0.50	0.32	0.06	0.59	-0.95	-0.34	-0.29	0.42	0.79	0.27	-0.41	-0.83	-0.46
-0.56	0.54	0.23	-0.42	-0.26	-1.81	-0.96	-0.51	-0.60	0.52	0.32	1.34	-0.67	0.29	-0.05	-0.13	-0.65
-0.24	0.59	-1.56	-0.01	-0.58	0.11	-0.29	-0.08	1.00	-0.62	0.73	-0.29	-0.48	0.05	0.00	1.48	0.85
-0.80	-0.69	1.38	0.48	-0.16	-1.03	-1.53	-0.52	0.21	1.06	-0.42	-0.73	0.68	0.27	-0.75	0.74	0.41
-0.03	0.56	-0.05	-0.56	-0.18	-0.85	0.22	0.65	0.18	-0.02	0.09	-0.51	0.43	-0.54	-0.55	0.14	0.22
-0.27	-0.02	-0.97	-1.12	0.14	-1.26	-1.48	-0.10	0.12	1.13	-0.27	1.16	-0.18	0.72	-0.02	0.53	-0.11
0.13	0.95	-1.15	0.08	0.85	-0.18	0.08	-0.04	-1.02	-0.55	0.81	0.59	-0.07	-0.28	0.76	0.03	0.76
0.61	-0.50	-1.08	-0.23	-0.19	0.56	0.97	-0.51	-0.65	-0.12	-0.60	0.81	-0.16	0.14	-0.10	-0.13	-0.81
-0.55	-0.57	0.76	-0.41	-0.55	1.36	0.37	-0.08	0.41	-0.84	-0.89	-0.11	-0.13	0.54	0.12	-0.06	-0.98
-0.37	0.62	1.03	0.15	-0.24	-0.15	-1.43	-0.43	0.46	0.09	-0.09	-0.36	-0.79	-0.57	-0.55	-0.40	0.67
-0.39	-0.07	-0.84	-0.45	-0.22	0.75	-0.70	-0.13	-0.39	0.73	-0.32	0.28	-0.16	0.26	-0.94	-0.66	-0.64
-0.30	-0.54	0.36	0.63	0.15	0.38	1.04	-0.29	0.00	-0.66	0.32	-0.62	0.61	-0.16	-0.05	0.09	-0.24
-0.39	0.42	1.41	-0.64	-0.16	-1.30	-1.85	-0.82	-0.59	-0.14	-0.34	0.35	-0.90	1.45	1.11	0.77	-0.15
0.08	0.29	-0.56	0.00	0.15	-1.47	-1.03	-0.25	-0.92	-0.62	0.23	1.09	1.06	0.09	0.26	-0.72	-0.58
b1																
1.728	-2.30	-1.57	1.393	-1.296	-1.652	0.978	-6.523	-1.108	-0.648	-0.677	-0.217	-0.185	0.097	-0.517	-0.241	-0.561
-0.11	-0.816	-0.345	-0.715	-0.69	-1.0	0.979	0.628	-0.925	-1.105	-1.412	-1.347	-2.128	-1.958			
w2																
0.385	-4.165	-1.59	1.75	-0.953	2.294	-2.558	11.08	-3.161	-1.599	-0.338	-2.85	1.032	3.873	2.751	1.569	2.43
1.037	-2.127	2.254	2.132	1.607	-2.255	2.133	-1.432	1.404	2.275	-2.12	0.245	2.396	-2.562			
b2																
0.1194																

Table B10.5 Weights and bias for model COMP from Group II

w1							
-1.1884	0.182	-0.9374	0.5679	-0.3351	-0.2558	-5.2589	-0.2763
-2.1869	2.8866	1.0088	-1.1248	-0.3941	0.0182	1.3825	-0.1151
-0.128	-1.2021	-0.104	2.8037	-1.3061	0.2297	0.6826	0.0102
-0.0207	1.4448	-0.465	-0.9313	-2.4762	0.0045	2.6815	1.2749
1.2701	1.0125	1.1661	-1.6151	-0.0083	0.5806	0.6177	1.1375
1.0311	0.5092	0.621	-1.1284	-0.2551	0.1715	-2.1946	-2.4888
1.8734	1.1565	2.357	-0.7279	-0.4765	-0.0271	1.1609	-0.3669
2.9708	0.431	-4.8571	-0.7982	-3.2505	-0.0773	-2.9495	-3.7917
-2.1509	-0.4917	-2.5108	-0.7216	-2.9942	0.0219	2.1745	0.2284
1.2086	1.2293	0.3426	-0.648	0.5133	0.4959	-1.6349	-1.6647
1.4481	2.3669	-1.301	-1.4687	4.8688	-0.0642	1.4993	0.1309
0.9894	-0.3978	-0.335	0.2886	0.8468	-2.0167	0.6984	-0.1969
0.8371	-0.4969	0.6019	-0.1619	2.041	-0.5576	-0.1745	1.8093
b1							
2.346	3.0436	-1.3634	0.5554	-0.498	-0.1821	0.0481	2.0566
-1.674	0.5284	-1.2239	-2.8439	1.8328			
w2							
1.5937	-3.8043	-3.2674	-1.637	0.336	-1.7192	4.5619	-2.4575
4.0304	0.4845	-1.565	-1.3314	0.4188			
b2							
-0.2534							

Table B10.6 Weights and bias for model FLEX from Group II

w1							
-1.4488	-0.8221	-0.502	2.7211	-0.0675	0.2174	0.1212	-0.7504
0.8543	0.2628	1.8752	1.2488	-1.1405	0.7772	-0.8542	-1.4933
-1.2083	-0.1092	-1.5005	-0.1481	0.6398	-0.5635	1.1665	1.6845
-1.769	-1.3208	-4.1244	-0.0042	-0.5436	-3.902	-5.9445	3.1523
-2.7013	-3.9625	-9.5696	3.8317	0.4865	4.6621	1.7553	3.9148
-2.3995	0.2943	9.169	-7.4938	-7.296	0.6183	-1.5866	0.0283
11.4797	-1.5484	9.4932	-2.3609	8.5039	-0.9344	-4.0579	-1.6971
-0.8368	-3.097	19.8282	-7.2423	-15.6804	2.0247	1.8409	-5.4337
-2.3159	-1.1394	-2.9464	1.0291	2.4679	-0.0572	-1.6116	-0.0797
1.3174	3.0794	1.2668	1.3446	0.7181	-1.0816	-3.2753	-1.2864
b1							
1.9638	1.4822	-0.7477	0.0545	-1.5794	-3.9594	2.3601	7.1784
0.5741	4.2847						
w2							
8.9119	2.7676	6.6768	-7.0178	0.1871	10.284	2.7118	-3.5751
-5.4928	4.0319						
b2							
0.1831							

Table B10.7 Weights and bias for model COMP+FLEX from Group II

w1							
0.4057	-3.4642	-6.0935	0.8761	3.5704	-1.5785	-1.6205	-1.192
-2.2973	-3.3549	4.0355	-0.5293	-2.3551	-16.0927	-2.2156	3.3834
2.4752	1.1469	-4.3217	2.1472	-1.054	4.3662	0.1911	2.3316
-1.0286	-2.1904	-1.445	-0.021	-2.8822	-0.0356	2.4545	0.9563
-0.486	-2.2571	3.0784	1.8721	-2.061	-0.0449	1.5076	0.5353
-0.0431	-0.2914	1.1077	0.3167	1.1889	0.3559	-0.6339	-3.0184
-1.2901	0.6595	0.8311	-0.7221	0.6385	0.0546	-1.3238	-0.543
0.4945	-4.306	0.0916	-2.063	-0.0161	0.0177	-0.2556	-0.8865
2.0755	-0.8918	-0.866	0.0306	7.4444	0.0675	-5.5135	-0.8417
3.3736	0.7742	-0.2385	1.7644	-0.6616	0.2131	-1.1627	1.5934
-0.4376	-3.2113	-2.917	-0.4292	-0.5983	0.4761	2.3449	0.0592
-5.6668	-1.3495	-6.2314	3.7799	0.7846	-1.4832	-6.7488	-0.9901
0.1437	3.5828	2.9856	2.8431	0.6768	-0.8325	-0.0725	-0.4212
0.5898	-1.9165	-9.4482	0.5304	5.59	0.0564	2.9246	1.6678
-0.3042	-2.4195	-8.2131	-2.22	-5.4227	-2.2726	-6.0587	1.9952
0.7098	-0.3472	-1.9458	0.1555	-18.8732	-1.4917	-3.4175	-6.8389
4.0293	0.1033	-3.3914	-1.3056	0.9756	-0.1814	-0.4908	0.7369
b1							
-4.3981	4.1709	-2.7377	0.341	0.1609	1.305	-1.428	-0.5244
-0.5944	1.1347	1.2699	-4.0717	3.777	-3.2041	0.1645	2.0072
3.047							
w2							
0.0519	0.0072	0.0254	-1.8906	-2.11	-1.0874	-0.1308	1.1345
-1.1354	-1.2396	0.5623	-0.1067	0.3931	1.6966	2.2881	-0.5978
-1.6474							
-1.5204	-0.1465	-0.2333	3.8884	0.8843	0.9265	-5.5619	1.473
6.7699	0.4607	-7.9291	0.7627	-4.7897	-11.6289	-15.3434	3.9745
-2.956							
b2							
-0.0072				3.8507			