

Appendix F

Algorithms Results for Different Scenarios

This appendix contains the results obtained from the execution of EEMACOMP, EEMACOMH, EEMMASMP, EEMMASMH, EEMACOMC, and NSGA-II-MPA algorithms. Each table represents the results of the execution for each algorithm, for a specific scenario. The results of a total of 54 scenarios, generated as listed in Table 7.2 were presented.

Table F.1: Scenario 1a: $N_G = 30, T_{sm} = 1, R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.90 ± 0.46	0.174	0	0.041 ± 0.007	0.003	3	63224.486 ± 267.890	101.730	0	4
<i>PEEMACOMH</i>	99.01 ± 3.18	1.209	0	0.045 ± 0.007	0.003	0	62092.989 ± 226.056	85.844	0	5
<i>PEEMMASMP</i>	99.98 ± 0.04	0.015	5	0.044 ± 0.006	0.002	0	62296.492 ± 233.573	88.699	0	3
<i>PEEMMASMH</i>	99.82 ± 0.74	0.280	0	0.044 ± 0.007	0.003	0	62327.805 ± 229.138	87.015	0	5
<i>PEEMACOMC</i>	99.99 ± 0.01	0.003	10	0.053 ± 0.011	0.004	0	64314.165 ± 235.574	89.459	120	1
<i>PNSGA-II-MPA</i>	63.33 ± 8.78	3.336	0	0.035 ± 0.013	0.005	117	56870.433 ± 603.268	229.089	0	2

Table F.2: Scenario 1b: $N_G = 30, T_{sm} = 2, R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.99 ± 0.01	0.004	0	0.032 ± 0.005	0.002	0	63565.719 ± 176.532	67.038	0	5
<i>PEEMACOMH</i>	99.95 ± 0.08	0.029	0	0.036 ± 0.005	0.002	0	62211.133 ± 189.257	71.870	0	5
<i>PEEMMASMP</i>	99.99 ± 0.01	0.004	1	0.034 ± 0.005	0.002	0	62392.343 ± 181.858	69.060	0	3
<i>PEEMMASMH</i>	99.99 ± 0.01	0.003	0	0.034 ± 0.005	0.002	1	62428.696 ± 157.554	59.831	0	3
<i>PEEMACOMC</i>	99.99 ± 0.01	0.005	0	0.037 ± 0.006	0.002	0	64688.689 ± 126.121	47.894	60	1
<i>PNSGA-II-MPA</i>	67.49 ± 4.75	1.802	0	0.026 ± 0.007	0.003	59	55614.676 ± 519.436	197.254	0	2

Table F.3: Scenario 1c: $N_G = 30, T_{sm} = 3, R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.99 ± 0.02	0.006	0	0.031 ± 0.006	0.002	0	63544.068 ± 161.976	61.510	0	4
<i>PEEMACOMH</i>	99.99 ± 0.02	0.009	0	0.034 ± 0.005	0.002	0	62274.447 ± 164.946	62.638	0	4
<i>PEEMMASMP</i>	99.99 ± 0.01	0.006	0	0.032 ± 0.005	0.002	0	62570.899 ± 169.698	64.442	0	4
<i>PEEMMASMH</i>	100.00 ± 0.01	0.005	0	0.032 ± 0.006	0.002	1	62620.186 ± 193.859	73.617	0	3
<i>PEEMACOMC</i>	100.00 ± 0.00	0.002	0	0.033 ± 0.007	0.003	0	64891.575 ± 113.712	43.182	40	1
<i>PNSGA-II-MPA</i>	69.73 ± 3.58	1.359	0	0.026 ± 0.008	0.003	39	55185.113 ± 380.058	144.326	0	2

Table F.4: Scenario 1d: $N_G = 30, T_{sm} = 4, R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.99 ± 0.02	0.006	0	0.027 ± 0.002	0.001	0	63506.710 ± 162.595	61.745	0	4
<i>PEEMACOMH</i>	99.98 ± 0.03	0.010	0	0.030 ± 0.003	0.001	0	62157.398 ± 189.768	72.064	0	4
<i>PEEMMASMP</i>	99.99 ± 0.02	0.007	0	0.028 ± 0.002	0.001	1	62491.748 ± 164.565	62.493	0	3
<i>PEEMMASMH</i>	99.98 ± 0.03	0.010	0	0.028 ± 0.003	0.001	0	62548.683 ± 132.324	50.250	0	4
<i>PEEMACOMC</i>	100.00 ± 0.01	0.005	0	0.027 ± 0.003	0.001	0	64966.841 ± 95.356	36.211	30	1
<i>PNSGA-II-MPA</i>	68.40 ± 3.38	1.284	0	0.022 ± 0.004	0.002	29	54799.546 ± 349.731	132.809	0	2

Table F.5: Scenario 1e: $N_G = 30, T_{sm} = 5, R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.99 ± 0.03	0.012	0	0.026 ± 0.002	0.001	0	63653.053 ± 181.660	68.985	0	4
<i>PEEMACOMH</i>	99.98 ± 0.03	0.010	0	0.029 ± 0.003	0.001	0	62291.449 ± 174.384	66.222	0	4
<i>PEEMMASMP</i>	99.99 ± 0.02	0.008	0	0.027 ± 0.002	0.001	0	62606.987 ± 101.707	38.623	0	4
<i>PEEMMASMH</i>	99.99 ± 0.02	0.009	0	0.027 ± 0.002	0.001	1	62644.622 ± 109.402	41.545	0	3
<i>PEEMACOMC</i>	100.00 ± 0.01	0.004	0	0.025 ± 0.003	0.001	0	65083.452 ± 82.395	31.289	24	1
<i>PNSGA-II-MPA</i>	68.64 ± 3.21	1.218	0	0.021 ± 0.003	0.001	23	54743.463 ± 371.421	141.046	0	2

Table F.6: Scenario 1f: $N_G = 30, T_{sm} = 6, R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.99 ± 0.02	0.007	0	0.026 ± 0.003	0.001	0	63568.844 ± 178.857	67.920	0	4
<i>PEEMACOMH</i>	99.97 ± 0.04	0.016	0	0.028 ± 0.002	0.001	0	62232.058 ± 211.322	80.249	0	4
<i>PEEMMASMP</i>	99.99 ± 0.02	0.009	0	0.026 ± 0.003	0.001	0	62585.621 ± 151.951	57.703	0	4
<i>PEEMMASMH</i>	99.99 ± 0.02	0.007	0	0.026 ± 0.003	0.001	1	62645.141 ± 169.564	64.391	0	3
<i>PEEMACOMC</i>	99.99 ± 0.02	0.006	0	0.026 ± 0.003	0.001	1	65034.690 ± 111.904	42.495	20	1
<i>PNSGA-II-MPA</i>	69.41 ± 2.15	0.816	0	0.022 ± 0.004	0.002	18	54680.648 ± 367.682	139.626	0	2

Table F.7: Scenario 2a: $N_G = 30, T_{sm} = 1, R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.99 ± 0.01	0.005	5	0.058 ± 0.012	0.005	54	65226.872 ± 263.451	100.045	9	1
<i>PEEMACOMH</i>	99.19 ± 1.40	0.533	0	0.062 ± 0.015	0.006	6	65120.907 ± 269.432	102.316	4	5
<i>PEEMMASMP</i>	99.99 ± 0.01	0.004	4	0.059 ± 0.011	0.004	43	65181.359 ± 249.229	94.644	20	2
<i>PEEMMASMH</i>	99.95 ± 0.14	0.055	2	0.061 ± 0.011	0.004	16	65230.484 ± 255.296	96.948	35	4
<i>PEEMACOMC</i>	99.99 ± 0.02	0.006	1	0.073 ± 0.012	0.005	1	65235.356 ± 201.804	76.634	52	3
<i>PNSGA-II-MPA</i>	34.62 ± 10.30	3.913	0	0.071 ± 0.041	0.016	0	58325.611 ± 1226.224	465.655	0	6

Table F.8: Scenario 2b: $N_G = 30, T_{sm} = 2, R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.99 ± 0.01	0.004	0	0.045 ± 0.009	0.003	31	65515.194 ± 167.296	63.530	13	1
<i>PEEMACOMH</i>	99.97 ± 0.03	0.013	1	0.048 ± 0.007	0.003	7	65275.753 ± 257.623	97.831	0	5
<i>PEEMMASMP</i>	99.99 ± 0.01	0.005	0	0.047 ± 0.006	0.002	9	65383.847 ± 258.138	98.027	4	4
<i>PEEMMASMH</i>	100.00 ± 0.01	0.004	1	0.046 ± 0.007	0.003	13	65404.545 ± 270.217	102.614	10	3
<i>PEEMACOMC</i>	99.99 ± 0.02	0.007	0	0.053 ± 0.009	0.003	0	65606.504 ± 140.949	53.525	33	2
<i>PNSGA-II-MPA</i>	38.35 ± 10.92	4.145	0	0.056 ± 0.022	0.008	0	56729.359 ± 1082.743	411.168	0	6

Table F.9: Scenario 2c: $N_G = 30, T_{sm} = 3, R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.99 ± 0.01	0.005	0	0.040 ± 0.006	0.002	29	65546.819 ± 143.534	54.507	6	1
<i>PEEMACOMH</i>	99.98 ± 0.02	0.008	0	0.044 ± 0.008	0.003	1	65132.242 ± 205.670	78.103	0	5
<i>PEEMMASMP</i>	99.99 ± 0.01	0.005	0	0.043 ± 0.006	0.002	6	65328.468 ± 204.463	77.644	0	3
<i>PEEMMASMH</i>	100.00 ± 0.01	0.004	0	0.043 ± 0.007	0.003	4	65322.738 ± 219.420	83.324	0	4
<i>PEEMACOMC</i>	99.99 ± 0.02	0.007	0	0.045 ± 0.004	0.001	0	65781.230 ± 112.204	42.609	34	2
<i>PNSGA-II-MPA</i>	40.08 ± 8.05	3.058	0	0.050 ± 0.017	0.006	0	55849.097 ± 1056.987	401.388	0	6

Table F.10: Scenario 2d: $N_G = 30, T_{sm} = 4, R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.99 ± 0.03	0.010	0	0.038 ± 0.004	0.001	28	65125.553 ± 237.599	90.227	0	2
<i>PEEMACOMH</i>	99.61 ± 0.21	0.081	0	0.042 ± 0.005	0.002	1	64730.302 ± 276.602	105.039	0	3
<i>PEEMMASMP</i>	100.00 ± 0.01	0.005	0	0.041 ± 0.005	0.002	1	64927.279 ± 214.315	81.385	0	3
<i>PEEMMASMH</i>	99.99 ± 0.03	0.011	0	0.041 ± 0.005	0.002	0	64999.946 ± 254.636	96.697	0	5
<i>PEEMACOMC</i>	99.99 ± 0.02	0.009	0	0.045 ± 0.005	0.002	0	65783.826 ± 122.137	46.381	30	1
<i>PNSGA-II-MPA</i>	37.51 ± 8.74	3.319	0	0.056 ± 0.020	0.008	0	55655.191 ± 1070.395	406.479	0	5



Table F.11: Scenario 2e: $N_G = 30$, $T_{sm} = 5$, $R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
$PEEMACOMP$	99.99 ± 0.02	0.008	0	0.036 ± 0.005	0.002	18	65617.854 ± 168.297	63.910	0	2
$PEEMACOMH$	99.99 ± 0.02	0.008	0	0.041 ± 0.005	0.002	0	65145.065 ± 266.484	101.197	0	5
$PEEMMASMP$	100.00 ± 0.01	0.005	0	0.040 ± 0.007	0.003	3	65344.205 ± 205.927	78.200	0	3
$PEEMMASMH$	100.00 ± 0.02	0.006	0	0.040 ± 0.005	0.002	1	65316.900 ± 207.545	78.815	0	4
$PEEMACOMC$	99.98 ± 0.03	0.012	0	0.040 ± 0.009	0.003	2	65966.720 ± 143.414	54.461	24	1
$PNSGA-II-MPA$	38.40 ± 8.95	3.400	0	0.056 ± 0.022	0.009	0	55630.706 ± 1023.066	388.506	0	5

Table F.12: Scenario 2f: $N_G = 30$, $T_{sm} = 6$, $R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
$PEEMACOMP$	99.99 ± 0.02	0.007	0	0.036 ± 0.005	0.002	14	65484.216 ± 147.404	55.976	0	2
$PEEMACOMH$	99.99 ± 0.02	0.007	0	0.039 ± 0.008	0.003	0	65075.075 ± 216.256	82.122	0	3
$PEEMMASMP$	99.99 ± 0.02	0.008	0	0.039 ± 0.006	0.002	0	65324.222 ± 186.415	70.790	0	3
$PEEMMASMH$	100.00 ± 0.01	0.003	0	0.038 ± 0.006	0.002	0	65374.224 ± 215.049	81.664	0	3
$PEEMACOMC$	99.98 ± 0.04	0.013	0	0.037 ± 0.003	0.001	6	65984.503 ± 105.847	40.195	20	1
$PNSGA-II-MPA$	38.14 ± 6.74	2.560	0	0.057 ± 0.019	0.007	0	55545.986 ± 914.529	347.290	0	3

Table F.13: Scenario 3a: $N_G = 30$, $T_{sm} = 1$, $R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
$PEEMACOMP$	94.69 ± 4.28	1.626	6	0.114 ± 0.021	0.008	28	64001.298 ± 1414.019	536.969	23	4
$PEEMACOMH$	62.99 ± 5.77	2.191	0	0.150 ± 0.017	0.007	0	64034.460 ± 1198.534	455.140	0	6
$PEEMMASMP$	99.41 ± 0.44	0.168	21	0.112 ± 0.015	0.006	50	64171.344 ± 1224.235	464.899	19	2
$PEEMMASMH$	95.04 ± 3.77	1.430	9	0.114 ± 0.011	0.004	42	64240.559 ± 1131.037	429.508	56	1
$PEEMACOMC$	99.70 ± 0.10	0.038	73	0.140 ± 0.021	0.008	0	63131.522 ± 2180.916	828.196	0	3
$PNSGA-II-MPA$	10.91 ± 2.18	0.827	0	0.648 ± 0.804	0.305	0	73608.534 ± 18301.648	6949.995	22	5

Table F.14: Scenario 3b: $N_G = 30$, $T_{sm} = 2$, $R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
$PEEMACOMP$	97.33 ± 1.84	0.699	11	0.093 ± 0.014	0.005	43	65057.395 ± 662.695	251.657	31	1
$PEEMACOMH$	48.72 ± 4.03	1.530	0	0.149 ± 0.019	0.007	0	64744.536 ± 487.665	185.189	0	6
$PEEMMASMP$	96.90 ± 0.84	0.319	0	0.099 ± 0.014	0.005	9	64984.261 ± 526.431	199.911	1	4
$PEEMMASMH$	92.59 ± 3.71	1.407	0	0.102 ± 0.014	0.005	8	65018.660 ± 480.622	182.515	24	3
$PEEMACOMC$	99.16 ± 0.31	0.118	49	0.128 ± 0.017	0.007	0	64552.590 ± 809.187	307.286	0	2
$PNSGA-II-MPA$	11.50 ± 2.30	0.875	0	0.336 ± 0.037	0.014	0	64672.183 ± 299.427	113.706	4	5

Table F.15: Scenario 3c: $N_G = 30$, $T_{sm} = 3$, $R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
$PEEMACOMP$	99.85 ± 0.14	0.054	4	0.086 ± 0.016	0.006	13	65629.139 ± 265.796	100.935	39	1
$PEEMACOMH$	78.10 ± 5.92	2.248	0	0.114 ± 0.019	0.007	0	65128.423 ± 231.488	87.907	0	5
$PEEMMASMP$	99.77 ± 0.13	0.048	5	0.087 ± 0.010	0.004	8	65546.599 ± 212.285	80.615	1	3
$PEEMMASMH$	98.06 ± 0.15	0.057	5	0.086 ± 0.011	0.004	19	65544.757 ± 238.916	90.728	0	2
$PEEMACOMC$	99.90 ± 0.10	0.038	14	0.108 ± 0.015	0.006	0	65242.358 ± 222.482	84.487	0	3
$PNSGA-II-MPA$	12.27 ± 2.16	0.820	0	0.327 ± 0.043	0.016	0	64696.133 ± 152.603	57.951	0	5

Table F.16: Scenario 3d: $N_G = 30$, $T_{sm} = 4$, $R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
$PEEMACOMP$	99.13 ± 0.26	0.098	6	0.074 ± 0.008	0.003	20	65495.200 ± 147.854	56.147	29	1
$PEEMACOMH$	51.07 ± 4.78	1.816	0	0.139 ± 0.024	0.009	0	64988.903 ± 186.441	70.801	0	5
$PEEMMASMP$	97.34 ± 0.49	0.187	4	0.080 ± 0.009	0.003	6	65405.510 ± 159.005	60.382	1	3
$PEEMMASMH$	96.10 ± 0.72	0.273	2	0.081 ± 0.011	0.004	4	65397.152 ± 161.211	61.219	0	4
$PEEMACOMC$	99.07 ± 0.24	0.091	13	0.102 ± 0.011	0.004	0	65161.206 ± 175.899	66.797	0	2
$PNSGA-II-MPA$	12.07 ± 2.18	0.828	0	0.335 ± 0.046	0.018	0	64609.478 ± 155.420	59.020	0	5

Table F.17: Scenario 3e: $N_G = 30$, $T_{sm} = 5$, $R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
$PEEMACOMP$	99.92 ± 0.08	0.031	4	0.072 ± 0.013	0.005	14	65491.333 ± 154.719	58.754	17	1
$PEEMACOMH$	71.58 ± 5.62	2.133	0	0.106 ± 0.019	0.007	0	65142.655 ± 154.383	58.626	0	5
$PEEMMASMP$	99.92 ± 0.09	0.033	3	0.075 ± 0.007	0.003	2	65430.145 ± 151.300	57.456	2	4
$PEEMMASMH$	96.89 ± 0.16	0.062	1	0.076 ± 0.009	0.003	8	65411.462 ± 144.077	54.713	3	2
$PEEMACOMC$	99.76 ± 0.19	0.072	8	0.101 ± 0.019	0.007	0	65377.718 ± 220.545	83.751	2	3
$PNSGA-II-MPA$	12.13 ± 2.54	0.963	0	0.344 ± 0.049	0.019	0	64617.781 ± 134.993	51.263	0	5

Table F.18: Scenario 3f: $N_G = 30, T_{sm} = 6, R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
$PEEMACOMP$	99.93 ± 0.09	0.033	3	0.071 ± 0.011	0.004	11	65779.387 ± 147.350	55.956	20	1
$PEEMACOMH$	79.73 ± 5.16	1.959	0	0.102 ± 0.015	0.006	0	65317.919 ± 238.452	90.551	0	5
$PEEMMASMP$	99.90 ± 0.13	0.048	2	0.075 ± 0.008	0.003	3	65664.166 ± 141.667	53.797	0	3
$PEEMMASMH$	96.66 ± 0.25	0.094	5	0.076 ± 0.007	0.003	6	65659.230 ± 142.055	53.945	0	2
$PEEMACOMC$	99.93 ± 0.10	0.040	5	0.089 ± 0.011	0.004	0	65383.320 ± 169.117	64.222	0	3
$PNSGA-II-MPA$	12.68 ± 1.86	0.706	0	0.327 ± 0.026	0.010	0	64572.612 ± 165.208	62.737	0	5

Table F.19: Scenario 4a: $N_G = 100, T_{sm} = 1, R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
$PEEMACOMP$	97.49 ± 6.58	2.497	118	0.031 ± 0.007	0.003	114	60767.397 ± 641.430	243.581	32	1
$PEEMACOMH$	49.48 ± 18.62	7.070	0	0.060 ± 0.014	0.005	0	59463.509 ± 932.029	353.935	0	6
$PEEMMASMP$	93.30 ± 11.89	4.514	0	0.039 ± 0.009	0.004	1	60679.108 ± 681.288	258.717	0	5
$PEEMMASMH$	90.23 ± 13.43	5.099	2	0.040 ± 0.011	0.004	1	60711.591 ± 698.380	265.208	1	4
$PEEMACOMC$	88.02 ± 10.31	3.914	0	0.037 ± 0.007	0.003	4	60278.843 ± 759.165	288.291	1	3
$PNSGA-II-MPA$	25.44 ± 10.98	4.170	0	0.237 ± 0.078	0.030	0	62051.618 ± 1288.137	489.166	86	2

Table F.20: Scenario 4b: $N_G = 100, T_{sm} = 2, R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
$PEEMACOMP$	99.97 ± 0.04	0.014	47	0.023 ± 0.004	0.002	59	61684.110 ± 263.857	100.199	39	1
$PEEMACOMH$	59.65 ± 16.82	6.389	0	0.047 ± 0.009	0.003	0	60582.562 ± 435.989	165.565	0	6
$PEEMMASMP$	99.52 ± 0.98	0.373	2	0.030 ± 0.007	0.003	0	61505.116 ± 289.649	109.993	0	3
$PEEMMASMH$	97.44 ± 2.26	0.857	1	0.032 ± 0.008	0.003	0	61515.673 ± 304.920	115.793	1	3
$PEEMACOMC$	97.34 ± 4.47	1.699	0	0.032 ± 0.012	0.005	1	61251.689 ± 446.044	169.384	0	5
$PNSGA-II-MPA$	35.68 ± 14.93	5.671	0	0.217 ± 0.097	0.037	0	61231.443 ± 1012.577	384.523	20	2

Table F.21: Scenario 4c: $N_G = 100, T_{sm} = 3, R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
$PEEMACOMP$	99.98 ± 0.03	0.012	8	0.018 ± 0.002	0.001	39	61926.924 ± 181.857	69.059	40	1
$PEEMACOMH$	75.45 ± 14.40	5.468	0	0.038 ± 0.006	0.002	0	61074.074 ± 384.329	145.948	0	5
$PEEMMASMP$	99.95 ± 0.09	0.036	2	0.024 ± 0.004	0.001	0	61816.187 ± 206.793	78.529	0	4
$PEEMMASMH$	97.73 ± 0.14	0.054	5	0.026 ± 0.004	0.001	0	61802.234 ± 234.342	88.991	0	2
$PEEMACOMC$	99.70 ± 0.79	0.301	2	0.024 ± 0.004	0.002	1	61734.794 ± 278.649	105.816	0	3
$PNSGA-II-MPA$	44.72 ± 14.29	5.428	0	0.165 ± 0.067	0.026	0	60308.215 ± 955.849	362.981	0	5

Table F.22: Scenario 4d: $N_G = 100, T_{sm} = 4, R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
$PEEMACOMP$	99.98 ± 0.03	0.010	12	0.019 ± 0.004	0.002	27	61948.178 ± 190.681	72.411	29	1
$PEEMACOMH$	71.71 ± 16.65	6.321	0	0.039 ± 0.007	0.003	0	61054.009 ± 357.629	135.808	0	5
$PEEMMASMP$	99.89 ± 0.27	0.103	3	0.023 ± 0.005	0.002	0	61807.696 ± 212.408	80.661	0	3
$PEEMMASMH$	96.92 ± 0.56	0.211	2	0.024 ± 0.004	0.002	0	61814.092 ± 212.300	80.620	1	2
$PEEMACOMC$	99.76 ± 0.48	0.181	0	0.022 ± 0.002	0.001	3	61688.167 ± 289.308	109.864	0	3
$PNSGA-II-MPA$	43.28 ± 14.74	5.596	0	0.188 ± 0.076	0.029	0	60668.669 ± 977.903	371.356	0	5

Table F.23: Scenario 4e: $N_G = 100, T_{sm} = 5, R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
$PEEMACOMP$	99.99 ± 0.03	0.013	2	0.017 ± 0.003	0.001	24	62059.323 ± 183.441	69.661	23	1
$PEEMACOMH$	77.88 ± 12.32	4.680	0	0.036 ± 0.007	0.003	0	61224.766 ± 284.764	108.138	0	4
$PEEMMASMP$	99.97 ± 0.05	0.020	0	0.022 ± 0.003	0.001	0	61884.880 ± 200.674	76.205	0	4
$PEEMMASMH$	96.32 ± 0.18	0.070	1	0.026 ± 0.004	0.002	0	61869.871 ± 205.383	77.993	0	3
$PEEMACOMC$	99.82 ± 0.41	0.157	0	0.021 ± 0.002	0.001	0	61837.894 ± 271.395	103.061	1	2
$PNSGA-II-MPA$	41.24 ± 16.47	6.256	0	0.206 ± 0.097	0.037	0	60573.137 ± 798.495	303.226	0	4

Table F.24: Scenario 4f: $N_G = 100, T_{sm} = 6, R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
$PEEMACOMP$	99.99 ± 0.02	0.007	3	0.015 ± 0.003	0.001	20	62023.971 ± 173.217	65.778	20	1
$PEEMACOMH$	77.76 ± 11.65	4.423	0	0.033 ± 0.007	0.003	0	61177.929 ± 258.965	98.341	0	3
$PEEMMASMP$	99.98 ± 0.04	0.016	0	0.019 ± 0.003	0.001	0	61890.620 ± 201.835	76.646	0	3
$PEEMMASMH$	95.59 ± 0.14	0.052	0	0.023 ± 0.003	0.001	0	61870.458 ± 190.483	72.335	0	3
$PEEMACOMC$	99.95 ± 0.08	0.030	0	0.020 ± 0.002	0.001	0	61786.033 ± 227.451	86.374	0	3
$PNSGA-II-MPA$	44.31 ± 14.71	5.586	0	0.188 ± 0.077	0.029	0	60534.065 ± 624.689	237.224	0	2

Table F.25: Scenario 5a: $N_G = 100, T_{sm} = 1, R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	94.53 ± 9.51	3.611	56	0.047 ± 0.008	0.003	119	60709.700 ± 981.508	372.725	70	1
<i>PEEMACOMH</i>	47.57 ± 18.58	7.055	0	0.096 ± 0.032	0.012	0	58818.263 ± 985.701	374.317	0	5
<i>PEEMMASMP</i>	94.75 ± 9.25	3.511	61	0.061 ± 0.010	0.004	0	60576.821 ± 777.649	295.310	2	2
<i>PEEMMASMH</i>	92.40 ± 11.00	4.177	2	0.061 ± 0.022	0.008	1	60465.880 ± 789.736	299.900	1	4
<i>PEEMACOMC</i>	78.79 ± 16.81	6.382	0	0.063 ± 0.015	0.006	0	60499.958 ± 890.883	338.310	0	5
<i>FNSGA-II-MPA</i>	51.53 ± 14.69	5.580	0	0.099 ± 0.070	0.026	0	60083.048 ± 1612.485	612.336	47	3

Table F.26: Scenario 5b: $N_G = 100, T_{sm} = 2, R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.48 ± 1.32	0.500	34	0.036 ± 0.005	0.002	59	61651.210 ± 677.703	257.356	52	1
<i>PEEMACOMH</i>	67.85 ± 17.96	6.819	0	0.065 ± 0.017	0.006	0	59580.938 ± 843.767	320.418	0	5
<i>PEEMMASMP</i>	99.14 ± 2.27	0.863	13	0.047 ± 0.006	0.002	0	61250.944 ± 659.970	250.622	2	2
<i>PEEMMASMH</i>	97.23 ± 3.34	1.268	6	0.048 ± 0.008	0.003	1	61235.382 ± 635.453	241.311	1	3
<i>PEEMACOMC</i>	91.60 ± 11.59	4.400	0	0.047 ± 0.008	0.003	0	61409.163 ± 722.389	274.325	5	4
<i>FNSGA-II-MPA</i>	62.93 ± 11.06	4.200	0	0.063 ± 0.039	0.015	0	58489.752 ± 1437.332	545.822	0	5

Table F.27: Scenario 5c: $N_G = 100, T_{sm} = 3, R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	98.74 ± 3.27	1.241	36	0.034 ± 0.005	0.002	38	61716.716 ± 419.716	159.386	39	1
<i>PEEMACOMH</i>	45.07 ± 13.03	4.949	0	0.067 ± 0.011	0.004	0	59371.538 ± 724.454	275.109	0	5
<i>PEEMMASMP</i>	97.13 ± 4.57	1.737	3	0.042 ± 0.010	0.004	0	61190.523 ± 477.902	181.482	0	3
<i>PEEMMASMH</i>	94.67 ± 6.12	2.323	1	0.044 ± 0.006	0.002	1	61200.155 ± 504.360	191.529	1	2
<i>PEEMACOMC</i>	84.33 ± 11.22	4.259	0	0.044 ± 0.005	0.002	0	61313.928 ± 545.723	207.237	0	5
<i>FNSGA-II-MPA</i>	64.12 ± 10.24	3.890	0	0.064 ± 0.042	0.016	1	58209.978 ± 1306.440	496.116	0	4

Table F.28: Scenario 5d: $N_G = 100, T_{sm} = 4, R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.94 ± 0.07	0.028	9	0.029 ± 0.003	0.001	30	62177.310 ± 278.901	105.912	29	1
<i>PEEMACOMH</i>	66.07 ± 14.56	5.529	0	0.057 ± 0.011	0.004	0	59980.010 ± 541.183	205.513	0	4
<i>PEEMMASMP</i>	99.93 ± 0.12	0.047	6	0.037 ± 0.004	0.002	0	61674.493 ± 282.908	107.433	0	2
<i>PEEMMASMH</i>	96.91 ± 0.18	0.070	3	0.040 ± 0.003	0.001	0	61613.815 ± 274.259	104.149	1	3
<i>PEEMACOMC</i>	94.84 ± 7.03	2.671	0	0.038 ± 0.004	0.002	0	61693.781 ± 407.696	154.821	0	4
<i>FNSGA-II-MPA</i>	67.49 ± 5.73	2.174	0	0.053 ± 0.025	0.010	0	57864.309 ± 1064.516	404.247	0	4

Table F.29: Scenario 5e: $N_G = 100, T_{sm} = 5, R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.91 ± 0.13	0.050	4	0.028 ± 0.002	0.001	24	62324.560 ± 277.373	105.332	23	1
<i>PEEMACOMH</i>	69.79 ± 13.49	5.122	0	0.054 ± 0.011	0.004	0	60058.741 ± 424.982	161.386	0	4
<i>PEEMMASMP</i>	99.86 ± 0.31	0.117	5	0.038 ± 0.005	0.002	0	61790.100 ± 318.713	121.030	0	3
<i>PEEMMASMH</i>	96.08 ± 0.37	0.139	6	0.040 ± 0.005	0.002	0	61706.344 ± 318.672	121.015	1	2
<i>PEEMACOMC</i>	96.76 ± 4.47	1.699	0	0.039 ± 0.005	0.002	0	61734.661 ± 368.194	139.820	0	4
<i>FNSGA-II-MPA</i>	68.13 ± 3.92	1.489	0	0.048 ± 0.020	0.008	0	57600.732 ± 1039.846	394.878	0	4

Table F.30: Scenario 5f: $N_G = 100, T_{sm} = 6, R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.88 ± 0.39	0.148	6	0.027 ± 0.002	0.001	20	62397.835 ± 344.081	130.664	20	1
<i>PEEMACOMH</i>	70.14 ± 17.50	6.646	0	0.047 ± 0.009	0.003	0	60103.994 ± 633.657	240.630	0	4
<i>PEEMMASMP</i>	99.80 ± 0.57	0.218	1	0.033 ± 0.004	0.002	0	61816.394 ± 386.216	146.664	0	3
<i>PEEMMASMH</i>	95.34 ± 0.42	0.160	4	0.040 ± 0.004	0.002	0	61719.687 ± 460.593	174.909	0	2
<i>PEEMACOMC</i>	94.90 ± 7.76	2.947	0	0.036 ± 0.006	0.002	0	61839.904 ± 518.148	196.765	0	4
<i>FNSGA-II-MPA</i>	67.31 ± 6.85	2.600	0	0.055 ± 0.032	0.012	0	57782.114 ± 1099.095	417.378	0	4

Table F.31: Scenario 6a: $N_G = 100, T_{sm} = 1, R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	49.76 ± 7.60	2.888	63	0.101 ± 0.014	0.005	0	63966.209 ± 239.094	90.795	4	3
<i>PEEMACOMH</i>	17.87 ± 1.97	0.747	0	0.141 ± 0.027	0.010	0	63092.267 ± 469.712	178.372	0	4
<i>PEEMMASMP</i>	45.36 ± 6.69	2.542	0	0.102 ± 0.013	0.005	0	63802.972 ± 284.920	108.198	0	4
<i>PEEMMASMH</i>	37.76 ± 6.23	2.366	0	0.111 ± 0.017	0.007	0	63743.410 ± 334.980	127.208	0	4
<i>PEEMACOMC</i>	46.63 ± 7.77	2.949	55	0.145 ± 0.026	0.010	0	64132.040 ± 218.203	82.862	67	2
<i>FNSGA-II-MPA</i>	39.99 ± 4.14	1.571	2	0.066 ± 0.015	0.006	120	63723.083 ± 668.519	253.868	49	1

Table F.32: Scenario 6b: $N_G = 100, T_{sm} = 2, R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	70.35 ± 11.25	4.273	57	0.067 ± 0.006	0.002	9	64222.008 ± 410.147	155.752	0	1
<i>PEEMACOMH</i>	19.54 ± 3.58	1.360	0	0.109 ± 0.018	0.007	0	62811.829 ± 524.574	199.205	0	4
<i>PEEMMASMP</i>	52.48 ± 9.25	3.513	0	0.082 ± 0.008	0.003	0	63657.375 ± 356.806	135.496	0	4
<i>PEEMMASMH</i>	49.32 ± 9.27	3.522	0	0.081 ± 0.009	0.003	0	63592.264 ± 408.145	154.992	0	4
<i>PEEMACOMC</i>	49.79 ± 9.64	3.661	1	0.125 ± 0.025	0.010	0	64552.145 ± 224.790	85.363	60	2
<i>PNSGA-II-MPA</i>	44.33 ± 2.90	1.100	2	0.056 ± 0.009	0.003	51	63066.698 ± 589.824	223.984	0	3

Table F.33: Scenario 6c: $N_G = 100, T_{sm} = 3, R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	83.52 ± 5.96	2.265	40	0.057 ± 0.008	0.003	8	64377.146 ± 324.728	123.315	0	1
<i>PEEMACOMH</i>	21.44 ± 2.07	0.785	0	0.096 ± 0.016	0.006	0	62801.812 ± 557.635	211.760	0	4
<i>PEEMMASMP</i>	58.83 ± 6.17	2.344	0	0.070 ± 0.010	0.004	0	63719.011 ± 314.813	119.549	0	4
<i>PEEMMASMH</i>	57.77 ± 5.95	2.259	0	0.072 ± 0.008	0.003	0	63736.318 ± 356.174	135.256	0	4
<i>PEEMACOMC</i>	52.75 ± 8.59	3.261	0	0.116 ± 0.020	0.008	0	64776.202 ± 297.890	113.123	40	2
<i>PNSGA-II-MPA</i>	45.09 ± 2.97	1.126	0	0.052 ± 0.011	0.004	32	62842.974 ± 425.018	161.399	0	3

Table F.34: Scenario 6d: $N_G = 100, T_{sm} = 4, R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	88.91 ± 5.12	1.946	30	0.054 ± 0.007	0.003	12	64408.502 ± 333.447	126.625	0	1
<i>PEEMACOMH</i>	21.50 ± 2.42	0.919	0	0.093 ± 0.021	0.008	0	62719.980 ± 425.522	161.591	0	4
<i>PEEMMASMP</i>	60.10 ± 5.38	2.043	0	0.071 ± 0.009	0.003	0	63729.103 ± 363.186	137.919	0	4
<i>PEEMMASMH</i>	63.17 ± 7.47	2.838	0	0.071 ± 0.008	0.003	0	63776.172 ± 412.075	156.484	0	4
<i>PEEMACOMC</i>	51.06 ± 7.59	2.880	0	0.113 ± 0.019	0.007	0	64852.175 ± 254.121	96.502	30	2
<i>PNSGA-II-MPA</i>	43.60 ± 2.54	0.966	0	0.055 ± 0.014	0.005	18	62682.837 ± 431.736	163.951	0	3

Table F.35: Scenario 6e: $N_G = 100, T_{sm} = 5, R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	97.41 ± 1.83	0.695	23	0.051 ± 0.008	0.003	16	64694.801 ± 305.435	115.988	0	1
<i>PEEMACOMH</i>	27.80 ± 3.85	1.462	0	0.085 ± 0.018	0.007	0	62955.198 ± 394.722	149.895	0	5
<i>PEEMMASMP</i>	77.58 ± 9.38	3.562	0	0.063 ± 0.008	0.003	0	64064.886 ± 315.961	119.985	0	5
<i>PEEMMASMH</i>	83.74 ± 9.15	3.474	1	0.065 ± 0.009	0.003	1	64302.477 ± 356.163	135.252	0	4
<i>PEEMACOMC</i>	66.10 ± 9.08	3.447	0	0.099 ± 0.013	0.005	0	65124.118 ± 247.699	94.063	24	2
<i>PNSGA-II-MPA</i>	44.81 ± 2.54	0.964	0	0.054 ± 0.014	0.005	7	62688.714 ± 428.186	162.602	0	3

Table F.36: Scenario 6f: $N_G = 100, T_{sm} = 6, R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	98.35 ± 1.71	0.649	19	0.046 ± 0.005	0.002	13	64816.358 ± 324.336	123.166	0	1
<i>PEEMACOMH</i>	30.25 ± 4.11	1.561	0	0.078 ± 0.012	0.005	0	63037.767 ± 456.105	173.205	0	5
<i>PEEMMASMP</i>	81.69 ± 8.01	3.041	0	0.057 ± 0.006	0.002	0	64133.585 ± 329.989	125.312	0	5
<i>PEEMMASMH</i>	90.11 ± 5.77	2.190	1	0.060 ± 0.006	0.002	2	64401.268 ± 313.081	118.892	0	4
<i>PEEMACOMC</i>	71.83 ± 10.60	4.026	0	0.097 ± 0.014	0.005	0	65167.685 ± 219.785	83.463	20	2
<i>PNSGA-II-MPA</i>	45.46 ± 2.59	0.984	0	0.051 ± 0.010	0.004	5	62698.708 ± 402.134	152.709	0	3

Table F.37: Scenario 7a: $N_G = 300, T_{sm} = 1, R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	93.04 ± 5.98	2.272	118	0.070 ± 0.011	0.004	114	59664.151 ± 817.604	310.483	0	1
<i>PEEMACOMH</i>	55.69 ± 15.85	6.020	0	0.116 ± 0.022	0.008	0	58365.149 ± 1338.723	508.376	0	6
<i>PEEMMASMP</i>	83.60 ± 9.50	3.608	0	0.081 ± 0.014	0.005	3	59098.923 ± 1124.492	427.022	0	3
<i>PEEMMASMH</i>	78.12 ± 12.14	4.609	1	0.088 ± 0.014	0.005	0	58932.512 ± 1047.305	397.711	0	5
<i>PEEMACOMC</i>	78.70 ± 11.56	4.391	0	0.090 ± 0.017	0.007	1	60895.836 ± 663.018	251.779	120	2
<i>PNSGA-II-MPA</i>	41.79 ± 6.96	2.641	1	0.126 ± 0.037	0.014	2	55946.879 ± 845.442	321.054	0	3

Table F.38: Scenario 7b: $N_G = 300, T_{sm} = 2, R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\varrho}$	CI	ϱ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	98.26 ± 1.09	0.415	60	0.057 ± 0.007	0.003	57	60744.233 ± 701.076	266.231	0	1
<i>PEEMACOMH</i>	54.51 ± 12.58	4.778	0	0.107 ± 0.017	0.006	0	59134.469 ± 1211.763	460.163	0	5
<i>PEEMMASMP</i>	91.20 ± 5.40	2.050	0	0.070 ± 0.010	0.004	0	60135.895 ± 678.887	257.805	0	5
<i>PEEMMASMH</i>	85.95 ± 7.65	2.905	0	0.070 ± 0.011	0.004	2	60004.429 ± 727.168	276.140	0	3
<i>PEEMACOMC</i>	86.81 ± 7.31	2.775	0	0.074 ± 0.009	0.003	0	61624.241 ± 514.635	195.431	60	2
<i>PNSGA-II-MPA</i>	47.93 ± 6.57	2.495	0	0.101 ± 0.023	0.009	1	57023.982 ± 614.058	233.187	0	4

Table F.39: Scenario 7c: $N_G = 300$, $T_{sm} = 3$, $R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.01 \pm 0.74	0.282	39	0.053 \pm 0.005	0.002	39	60833.889 \pm 603.457	229.161	0	1
<i>PEEMACOMH</i>	58.28 \pm 12.14	4.609	0	0.096 \pm 0.012	0.005	0	59270.084 \pm 1200.147	455.752	0	5
<i>PEEMMASMP</i>	94.08 \pm 4.04	1.535	0	0.063 \pm 0.009	0.003	0	60381.056 \pm 705.074	267.750	0	5
<i>PEEMMASMH</i>	89.50 \pm 6.73	2.556	1	0.069 \pm 0.008	0.003	0	60385.598 \pm 910.002	345.570	0	3
<i>PEEMACOMC</i>	89.82 \pm 5.01	1.902	0	0.069 \pm 0.007	0.003	0	61955.239 \pm 413.362	156.973	40	2
<i>PNSGA-II-MPA</i>	54.78 \pm 4.96	1.884	0	0.089 \pm 0.017	0.007	1	57707.289 \pm 846.618	321.501	0	3

Table F.40: Scenario 7d: $N_G = 300$, $T_{sm} = 4$, $R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	nns	ρ	CI	nsp	ξ	CI	nhy	rank
<i>PEEMACOMP</i>	99.51 \pm 0.69	0.263	29	0.049 \pm 0.004	0.002	27	61362.221 \pm 583.576	221.611	0	1
<i>PEEMACOMH</i>	61.48 \pm 11.41	4.331	0	0.090 \pm 0.012	0.005	0	59652.101 \pm 962.851	365.640	0	5
<i>PEEMMASMP</i>	96.38 \pm 2.10	0.798	0	0.056 \pm 0.006	0.002	2	60695.994 \pm 730.138	277.268	0	3
<i>PEEMMASMH</i>	92.91 \pm 4.42	1.680	1	0.063 \pm 0.006	0.002	1	60657.401 \pm 705.691	267.984	0	3
<i>PEEMACOMC</i>	92.94 \pm 4.00	1.520	0	0.066 \pm 0.006	0.002	0	62310.982 \pm 326.953	124.160	30	2
<i>PNSGA-II-MPA</i>	56.15 \pm 4.17	1.585	0	0.086 \pm 0.012	0.005	0	57993.635 \pm 618.046	234.701	0	5

Table F.41: Scenario 7e: $N_G = 300$, $T_{sm} = 5$, $R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.72 \pm 0.23	0.088	24	0.047 \pm 0.005	0.002	23	61310.428 \pm 684.846	260.068	0	1
<i>PEEMACOMH</i>	61.82 \pm 11.87	4.508	0	0.090 \pm 0.014	0.005	0	59550.839 \pm 1205.634	457.836	0	4
<i>PEEMMASMP</i>	96.97 \pm 0.92	0.349	0	0.057 \pm 0.007	0.003	0	60885.171 \pm 651.764	247.505	0	4
<i>PEEMMASMH</i>	93.70 \pm 3.04	1.153	0	0.063 \pm 0.008	0.003	0	60799.321 \pm 742.919	282.121	0	4
<i>PEEMACOMC</i>	94.73 \pm 2.77	1.052	0	0.063 \pm 0.007	0.003	0	62121.522 \pm 368.008	139.750	24	2
<i>PNSGA-II-MPA</i>	57.11 \pm 4.31	1.637	0	0.084 \pm 0.018	0.007	1	58166.765 \pm 494.275	187.699	0	3

Table F.42: Scenario 7f: $N_G = 300$, $T_{sm} = 6$, $R_g = 300$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	99.77 \pm 0.18	0.066	15	0.047 \pm 0.005	0.002	18	61453.252 \pm 515.557	195.781	0	1
<i>PEEMACOMH</i>	64.31 \pm 8.84	3.359	0	0.086 \pm 0.013	0.005	0	59624.352 \pm 1108.043	420.776	0	6
<i>PEEMMASMP</i>	97.26 \pm 0.52	0.199	2	0.057 \pm 0.007	0.003	0	61127.984 \pm 601.689	228.490	0	4
<i>PEEMMASMH</i>	94.51 \pm 1.10	0.419	2	0.062 \pm 0.007	0.003	1	60694.849 \pm 758.565	288.063	0	3
<i>PEEMACOMC</i>	96.04 \pm 1.72	0.653	0	0.062 \pm 0.006	0.002	0	62292.129 \pm 341.366	129.633	20	2
<i>PNSGA-II-MPA</i>	57.44 \pm 4.29	1.629	0	0.085 \pm 0.018	0.007	1	58260.458 \pm 547.242	207.813	0	5

Table F.43: Scenario 8a: $N_G = 300$, $T_{sm} = 1$, $R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	57.73 \pm 9.90	3.759	119	0.106 \pm 0.013	0.005	118	59920.766 \pm 726.594	275.922	0	1
<i>PEEMACOMH</i>	30.13 \pm 5.41	2.053	0	0.191 \pm 0.025	0.009	0	57008.681 \pm 1295.680	492.030	0	5
<i>PEEMMASMP</i>	47.69 \pm 7.94	3.014	0	0.126 \pm 0.021	0.008	1	59349.600 \pm 842.997	320.125	0	4
<i>PEEMMASMH</i>	44.55 \pm 8.13	3.086	1	0.139 \pm 0.029	0.011	1	59158.660 \pm 808.495	307.024	0	3
<i>PEEMACOMC</i>	48.00 \pm 8.15	3.096	0	0.139 \pm 0.019	0.007	0	60049.206 \pm 641.399	243.569	0	5
<i>PNSGA-II-MPA</i>	20.46 \pm 2.97	1.127	0	0.265 \pm 0.036	0.014	0	64489.940 \pm 804.127	305.365	120	2

Table F.44: Scenario 8b: $N_G = 300$, $T_{sm} = 2$, $R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	56.48 \pm 9.23	3.506	59	0.099 \pm 0.016	0.006	58	60475.012 \pm 649.481	246.639	0	1
<i>PEEMACOMH</i>	28.44 \pm 5.56	2.110	0	0.177 \pm 0.025	0.009	0	57370.244 \pm 1110.111	421.561	0	5
<i>PEEMMASMP</i>	44.34 \pm 6.94	2.634	0	0.121 \pm 0.019	0.007	1	59858.127 \pm 785.103	298.141	0	4
<i>PEEMMASMH</i>	42.37 \pm 8.36	3.174	1	0.135 \pm 0.021	0.008	1	59535.577 \pm 859.987	326.577	0	3
<i>PEEMACOMC</i>	46.25 \pm 7.19	2.729	0	0.126 \pm 0.018	0.007	0	60600.033 \pm 447.278	169.853	0	5
<i>PNSGA-II-MPA</i>	22.78 \pm 4.19	1.590	0	0.251 \pm 0.028	0.011	0	64926.835 \pm 398.208	151.218	60	2

Table F.45: Scenario 8c: $N_G = 300$, $T_{sm} = 3$, $R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	65.50 \pm 12.17	4.622	39	0.087 \pm 0.013	0.005	39	61097.779 \pm 584.252	221.868	0	1
<i>PEEMACOMH</i>	30.20 \pm 5.08	1.928	0	0.173 \pm 0.020	0.008	0	57665.954 \pm 1015.658	385.693	0	4
<i>PEEMMASMP</i>	50.63 \pm 8.67	3.292	0	0.115 \pm 0.037	0.014	0	60559.718 \pm 693.155	263.223	0	4
<i>PEEMMASMH</i>	46.66 \pm 9.57	3.636	1	0.122 \pm 0.017	0.006	1	60147.474 \pm 745.628	283.150	0	3
<i>PEEMACOMC</i>	48.00 \pm 7.94	3.016	0	0.116 \pm 0.022	0.008	0	60969.451 \pm 508.311	193.030	0	4
<i>PNSGA-II-MPA</i>	22.93 \pm 3.95	1.502	0	0.260 \pm 0.027	0.010	0	64903.466 \pm 217.519	82.602	40	2

Table F.46: Scenario 8d: $N_G = 300, T_{sm} = 4, R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	68.56 ± 8.41	3.194	29	0.078 ± 0.008	0.003	29	61270.011 ± 471.914	179.208	0	1
<i>PEEMACOMH</i>	30.50 ± 4.38	1.664	0	0.171 ± 0.017	0.006	0	57855.751 ± 900.304	341.888	0	4
<i>PEEMMASMP</i>	53.40 ± 6.43	2.442	0	0.105 ± 0.020	0.008	0	60902.062 ± 487.941	185.294	0	4
<i>PEEMMASMH</i>	49.46 ± 7.41	2.815	1	0.116 ± 0.012	0.004	1	60419.280 ± 589.481	223.853	0	3
<i>PEEMACOMC</i>	53.36 ± 7.65	2.904	0	0.109 ± 0.015	0.006	0	61248.190 ± 346.946	131.752	0	4
<i>PNSGA-II-MPA</i>	24.30 ± 3.95	1.500	0	0.260 ± 0.026	0.010	0	64803.937 ± 186.757	70.920	30	2

Table F.47: Scenario 8e: $N_G = 300, T_{sm} = 5, R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	71.88 ± 10.71	4.069	23	0.077 ± 0.015	0.006	23	61379.528 ± 492.537	187.039	0	1
<i>PEEMACOMH</i>	31.02 ± 4.26	1.619	0	0.164 ± 0.020	0.007	0	57910.109 ± 1204.360	457.352	0	4
<i>PEEMMASMP</i>	53.98 ± 7.82	2.971	0	0.097 ± 0.019	0.007	0	61146.303 ± 535.447	203.334	0	4
<i>PEEMMASMH</i>	49.03 ± 9.02	3.426	1	0.106 ± 0.017	0.007	1	60546.164 ± 672.581	255.410	0	3
<i>PEEMACOMC</i>	54.58 ± 9.08	3.450	0	0.106 ± 0.014	0.005	0	61458.694 ± 338.349	128.487	0	4
<i>PNSGA-II-MPA</i>	22.41 ± 3.84	1.458	0	0.259 ± 0.023	0.009	0	64684.148 ± 469.194	178.175	24	2

Table F.48: Scenario 8f: $N_G = 300, T_{sm} = 6, R_g = 500$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	86.12 ± 5.06	1.921	19	0.068 ± 0.011	0.004	19	61913.483 ± 406.288	154.287	0	1
<i>PEEMACOMH</i>	35.75 ± 4.20	1.594	0	0.152 ± 0.020	0.008	0	58739.849 ± 679.759	258.136	0	4
<i>PEEMMASMP</i>	63.01 ± 4.72	1.793	0	0.091 ± 0.016	0.006	0	61552.664 ± 363.220	137.932	0	4
<i>PEEMMASMH</i>	58.56 ± 4.73	1.797	1	0.111 ± 0.024	0.009	1	61103.759 ± 441.805	167.774	0	3
<i>PEEMACOMC</i>	64.24 ± 7.35	2.793	0	0.089 ± 0.010	0.004	0	61737.664 ± 219.503	83.356	0	4
<i>PNSGA-II-MPA</i>	21.37 ± 4.27	1.620	0	0.271 ± 0.028	0.011	0	64744.982 ± 132.848	50.449	20	2

Table F.49: Scenario 9a: $N_G = 300, T_{sm} = 1, R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	19.90 ± 2.38	0.903	0	0.187 ± 0.025	0.010	5	49998.628 ± 1503.670	571.014	0	2
<i>PEEMACOMH</i>	12.40 ± 1.71	0.650	0	0.296 ± 0.041	0.016	0	44856.393 ± 1623.950	616.690	0	4
<i>PEEMMASMP</i>	16.28 ± 1.73	0.657	0	0.209 ± 0.023	0.009	0	48540.331 ± 1094.242	415.535	0	4
<i>PEEMMASMH</i>	14.79 ± 1.68	0.639	0	0.225 ± 0.029	0.011	2	47568.622 ± 1660.751	630.665	0	3
<i>PEEMACOMC</i>	14.37 ± 1.87	0.709	0	0.246 ± 0.037	0.014	0	50765.209 ± 1246.919	473.514	0	4
<i>PNSGA-II-MPA</i>	26.87 ± 3.17	1.203	120	0.148 ± 0.025	0.009	113	58532.224 ± 916.999	348.228	120	1

Table F.50: Scenario 9b: $N_G = 300, T_{sm} = 2, R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	20.43 ± 3.20	1.216	2	0.176 ± 0.022	0.008	3	51058.473 ± 1205.798	457.898	0	2
<i>PEEMACOMH</i>	12.49 ± 1.32	0.500	0	0.284 ± 0.039	0.015	0	45387.773 ± 1578.853	599.565	0	4
<i>PEEMMASMP</i>	16.51 ± 2.35	0.891	0	0.209 ± 0.037	0.014	1	49824.905 ± 1304.895	495.530	0	3
<i>PEEMMASMH</i>	14.31 ± 1.98	0.751	0	0.214 ± 0.027	0.010	0	48500.839 ± 1543.321	586.072	0	4
<i>PEEMACOMC</i>	14.69 ± 2.13	0.809	0	0.229 ± 0.029	0.011	0	51500.682 ± 1137.012	431.777	0	4
<i>PNSGA-II-MPA</i>	23.64 ± 2.80	1.062	58	0.148 ± 0.029	0.011	56	60058.894 ± 535.292	203.275	60	1

Table F.51: Scenario 9c: $N_G = 300, T_{sm} = 3, R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	24.53 ± 3.42	1.299	35	0.156 ± 0.021	0.008	18	52374.117 ± 788.967	299.608	0	2
<i>PEEMACOMH</i>	13.36 ± 1.47	0.560	0	0.251 ± 0.024	0.009	0	45869.401 ± 1662.672	631.395	0	5
<i>PEEMMASMP</i>	19.71 ± 2.20	0.835	1	0.170 ± 0.016	0.006	7	51680.217 ± 983.538	373.495	0	3
<i>PEEMMASMH</i>	16.49 ± 2.34	0.888	1	0.196 ± 0.026	0.010	0	50509.870 ± 1215.758	461.680	0	4
<i>PEEMACOMC</i>	15.84 ± 2.61	0.991	0	0.205 ± 0.033	0.013	0	52969.544 ± 834.896	317.049	0	5
<i>PNSGA-II-MPA</i>	21.35 ± 2.27	0.862	3	0.164 ± 0.024	0.009	15	61001.573 ± 430.931	163.645	40	1

Table F.52: Scenario 9d: $N_G = 300, T_{sm} = 4, R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	25.84 ± 3.88	1.472	28	0.146 ± 0.019	0.007	18	52801.550 ± 1032.938	392.255	0	1
<i>PEEMACOMH</i>	13.69 ± 1.42	0.539	0	0.261 ± 0.044	0.017	0	46294.130 ± 1514.349	575.069	0	4
<i>PEEMMASMP</i>	19.49 ± 3.01	1.141	1	0.171 ± 0.024	0.009	1	51326.327 ± 1189.155	451.578	0	3
<i>PEEMMASMH</i>	16.91 ± 2.10	0.796	0	0.192 ± 0.029	0.011	0	50389.864 ± 1739.927	660.732	0	4
<i>PEEMACOMC</i>	16.05 ± 2.37	0.899	0	0.195 ± 0.034	0.013	0	53072.900 ± 1251.343	475.194	0	4
<i>PNSGA-II-MPA</i>	21.43 ± 2.22	0.842	1	0.154 ± 0.022	0.009	11	61174.784 ± 383.731	145.721	30	2

Table F.53: Scenario 9e: $N_G = 300$, $T_{sm} = 5$, $R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	25.49 ± 4.02	1.527	21	0.146 ± 0.024	0.009	17	53088.762 ± 1097.656	416.832	0	1
<i>PEEMACOMH</i>	13.68 ± 1.86	0.706	0	0.265 ± 0.052	0.020	0	46410.901 ± 1824.780	692.955	0	4
<i>PEEMMASMP</i>	20.37 ± 2.48	0.942	2	0.163 ± 0.015	0.006	4	51953.859 ± 743.169	282.216	0	3
<i>PEEMMASMH</i>	16.92 ± 2.20	0.836	0	0.186 ± 0.030	0.012	0	50803.910 ± 1415.343	537.472	0	4
<i>PEEMACOMC</i>	17.48 ± 2.72	1.034	0	0.201 ± 0.031	0.012	0	53250.626 ± 823.638	312.774	0	4
<i>PNSGA-II-MPA</i>	19.11 ± 1.91	0.725	1	0.175 ± 0.026	0.010	3	61664.790 ± 427.184	162.222	24	2

Table F.54: Scenario 9f: $N_G = 300$, $T_{sm} = 6$, $R_g = 800$

\mathcal{PF}	\bar{n}_{alg}	CI	n_{alg}^w	$\bar{\rho}$	CI	ρ^w	ξ	CI	ξ^w	rank
<i>PEEMACOMP</i>	37.32 ± 5.34	2.029	18	0.115 ± 0.014	0.005	17	54929.165 ± 778.742	295.725	0	1
<i>PEEMACOMH</i>	16.71 ± 1.97	0.748	0	0.219 ± 0.036	0.014	0	47976.933 ± 1287.187	488.805	0	6
<i>PEEMMASMP</i>	30.40 ± 4.41	1.675	0	0.136 ± 0.014	0.006	2	53865.025 ± 736.264	279.594	0	3
<i>PEEMMASMH</i>	23.64 ± 3.30	1.253	1	0.160 ± 0.019	0.007	1	52832.253 ± 726.900	276.038	0	3
<i>PEEMACOMC</i>	22.17 ± 3.13	1.189	1	0.170 ± 0.026	0.010	0	55091.131 ± 808.302	306.950	0	5
<i>PNSGA-II-MPA</i>	19.40 ± 2.48	0.940	0	0.165 ± 0.030	0.011	0	61614.645 ± 268.340	101.901	20	2

Appendix G

Illustration of the Influence of Change Frequency and Change Severity on the Performance Metrics

This appendix presents a three dimension graphs to illustrate the influence of change frequency, T_{sm} , and change severity, R_g , on the performance metrics, \bar{n}_{alg} , \bar{Q} , and $\bar{\xi}$ for different number of nodes.

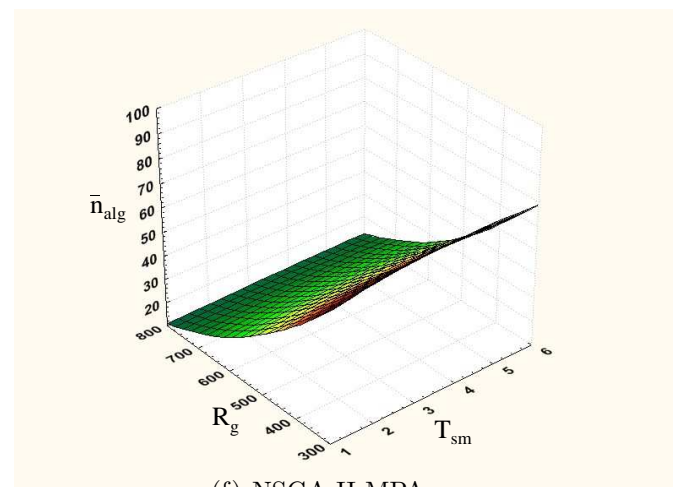
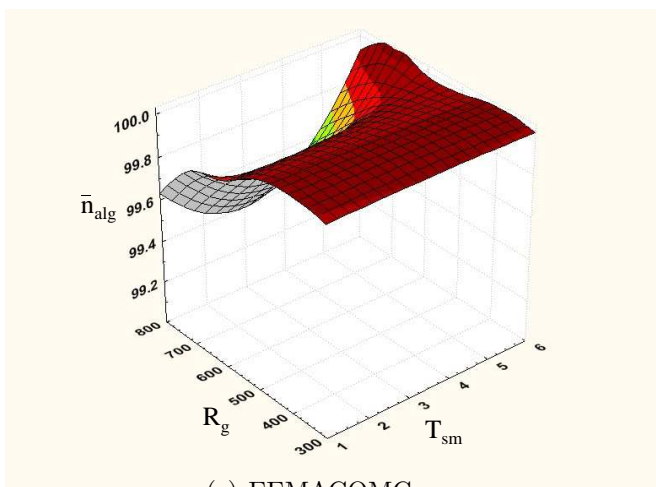
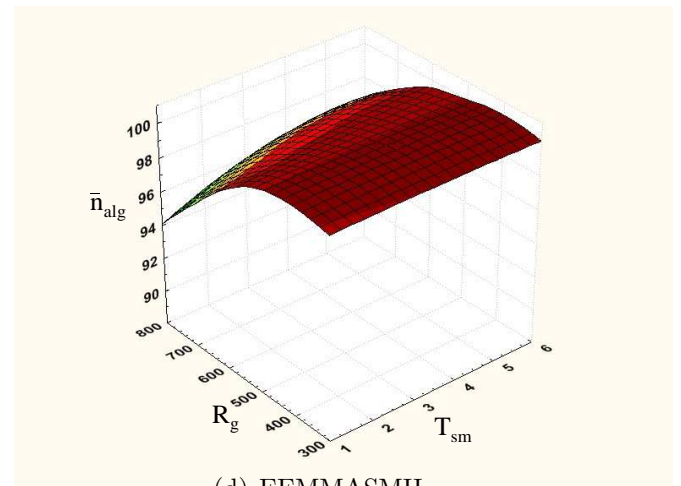
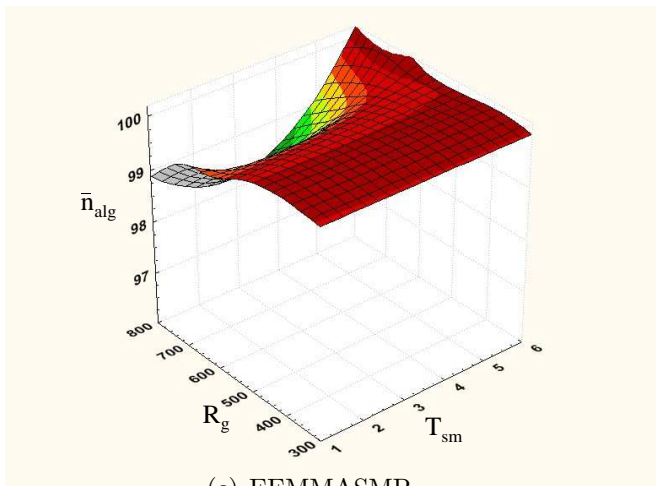
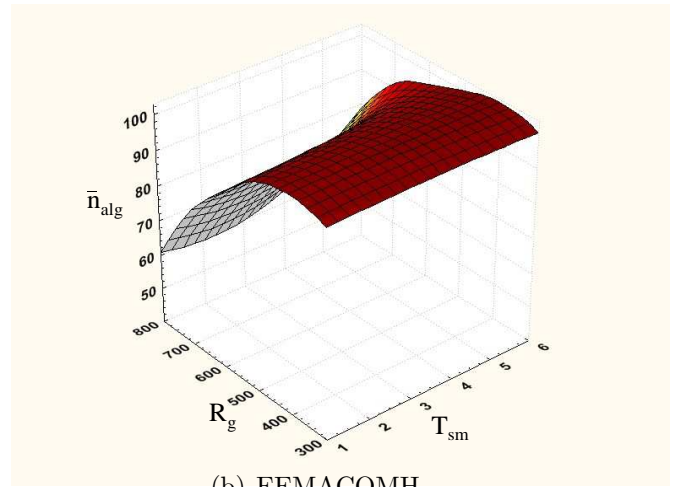
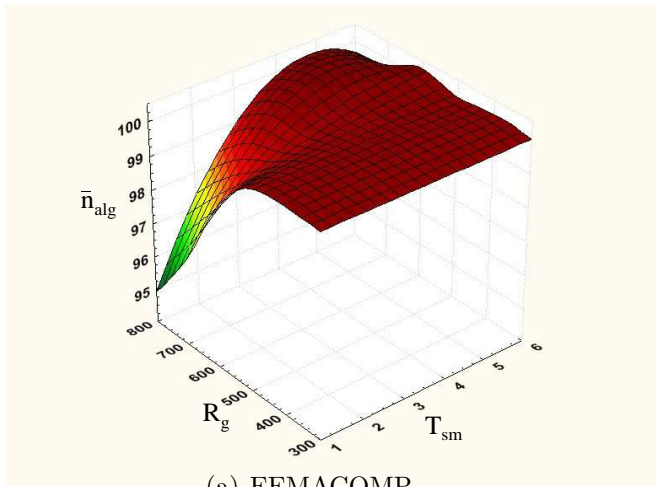


Figure G.1: Influence of R_g and T_{sm} on the \bar{n}_{alg} metric for $N_G = 30$

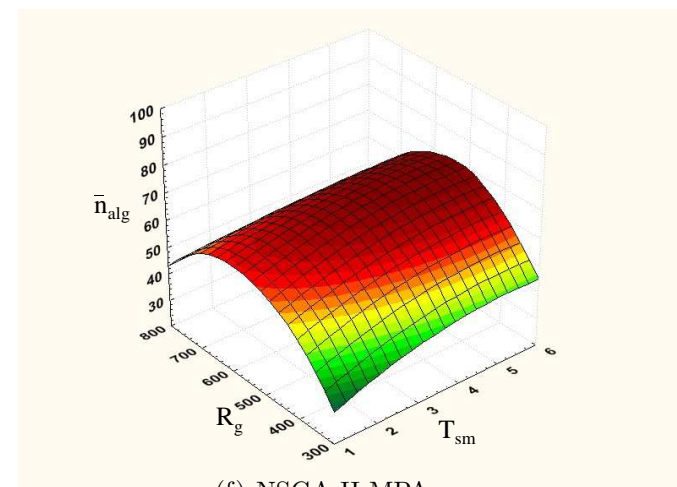
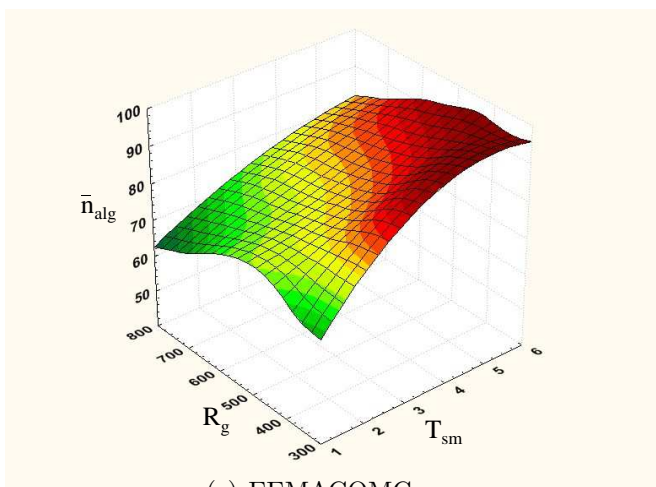
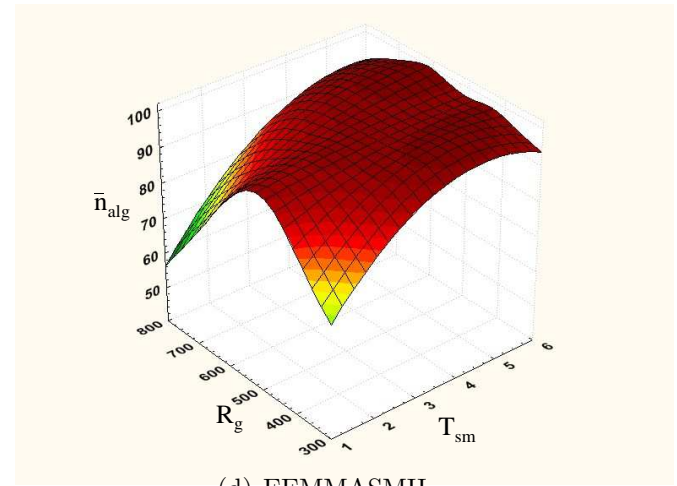
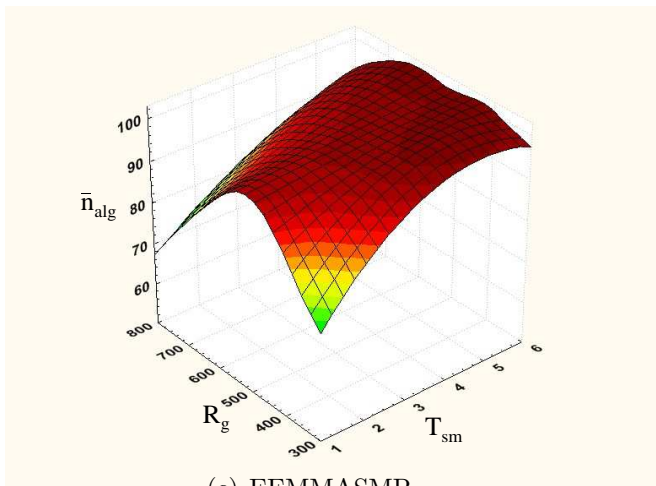
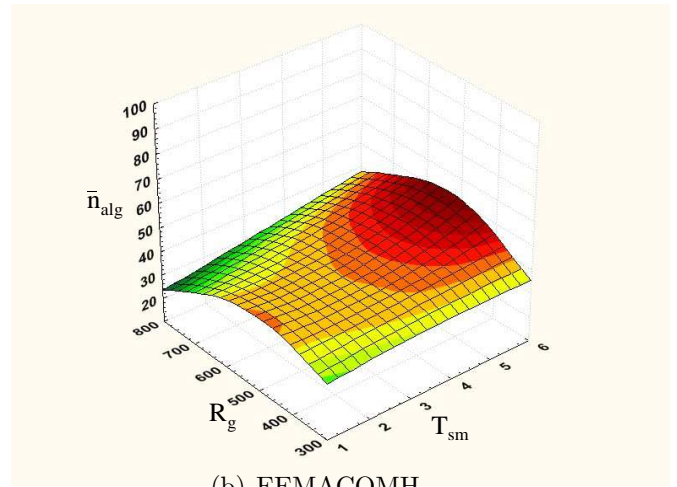
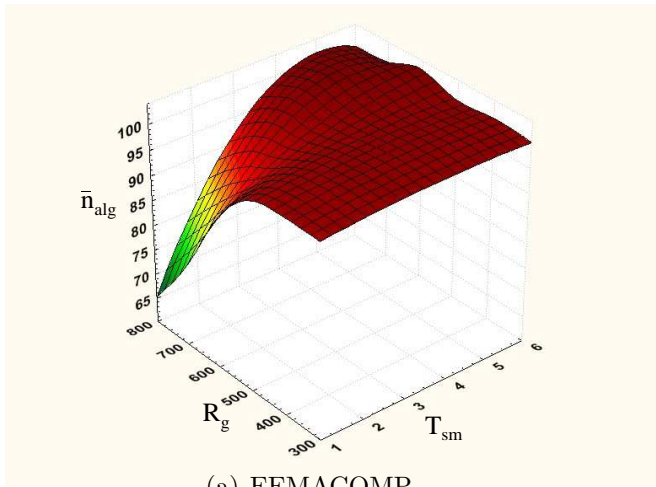
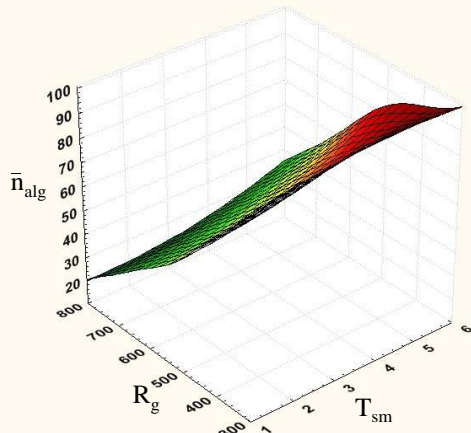
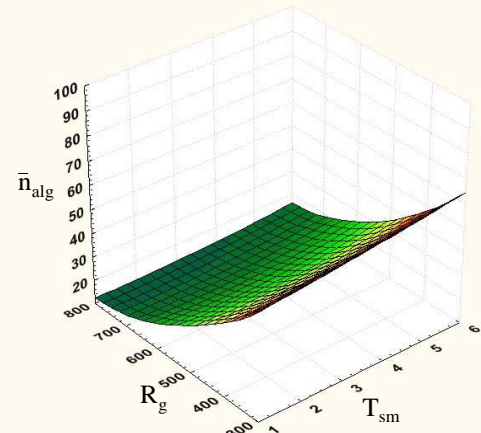


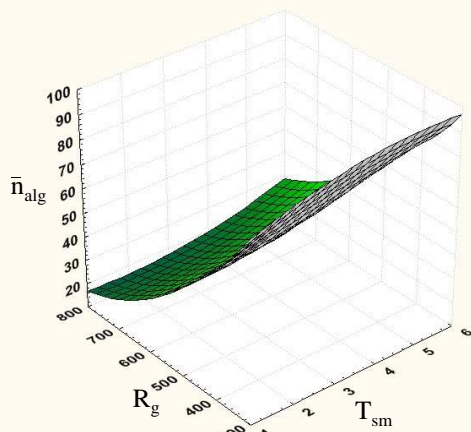
Figure G.2: Influence of R_g and T_{sm} on the \bar{n}_{alg} metric for $N_G = 100$



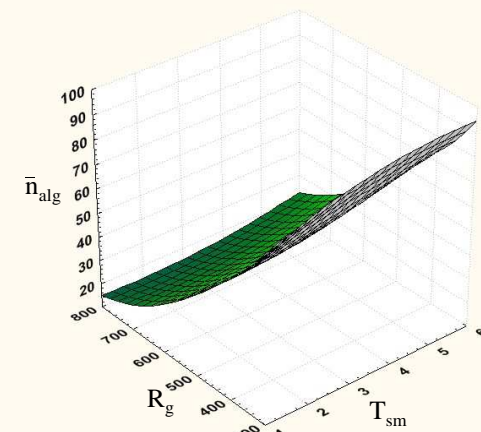
(a) EEMACOMP



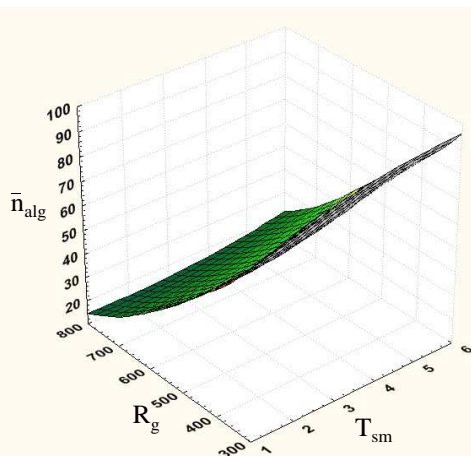
(b) EEMACOMH



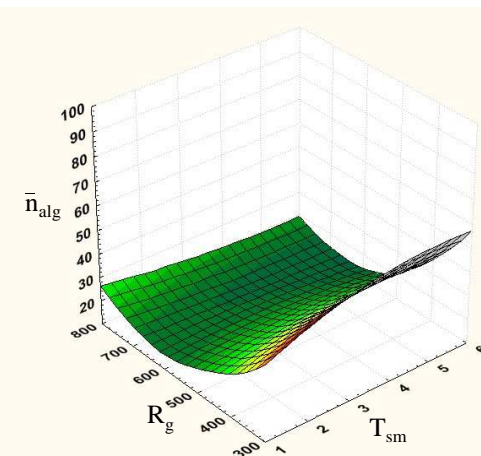
(c) EEMMASMP



(d) EEMMASMH

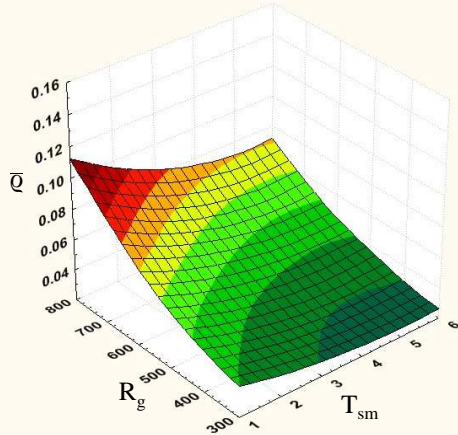


(e) EEMACOMC

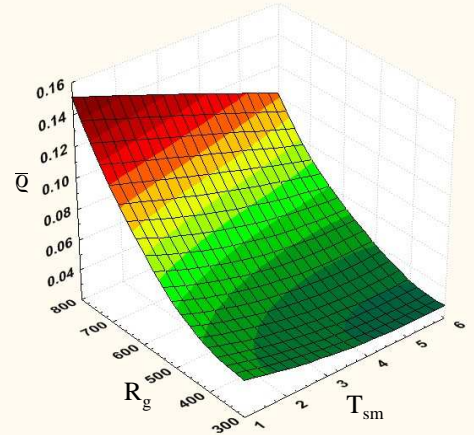


(f) NSGA-II-MPA

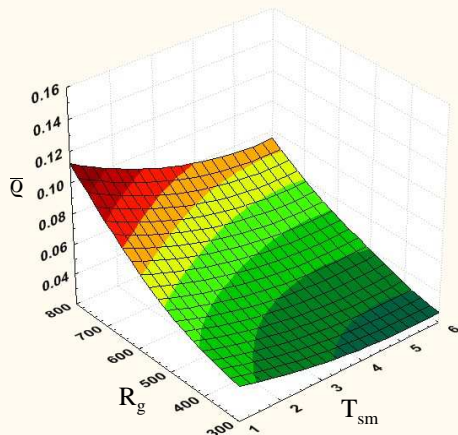
Figure G.3: Influence of R_g and T_{sm} on the \bar{n}_{alg} metric for $N_G = 300$



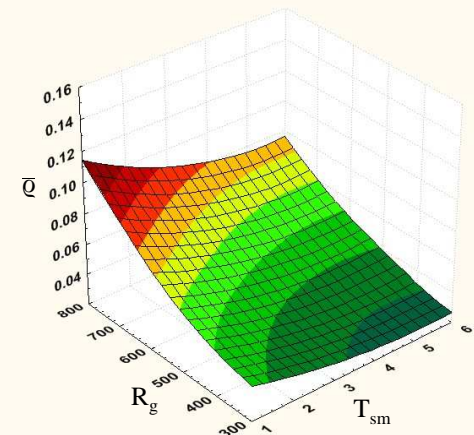
(a) EEMACOMP



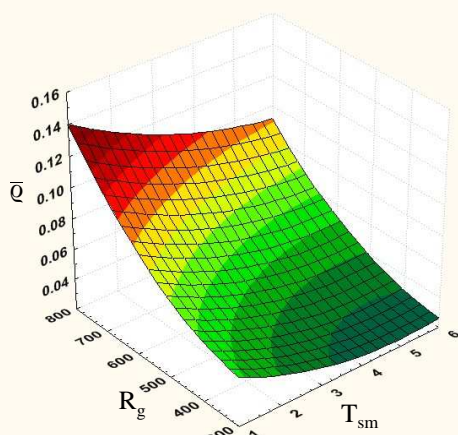
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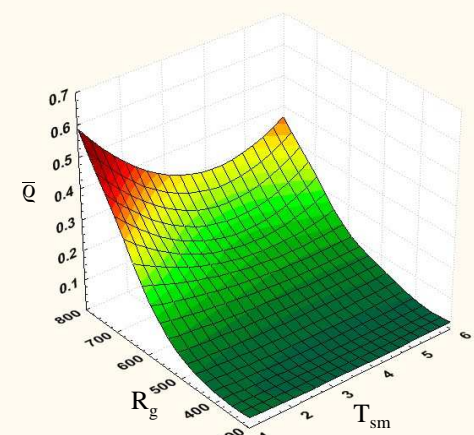
(c) EEMMASMP



(d) EEMMASMH

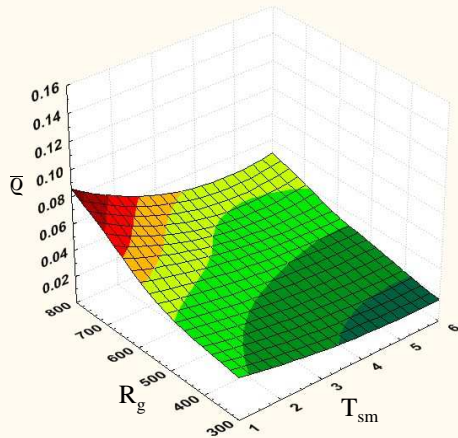


(e) EEMACOMC

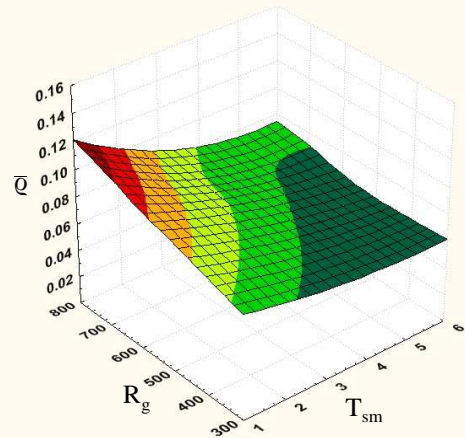


(f) NSGA-II-MPA

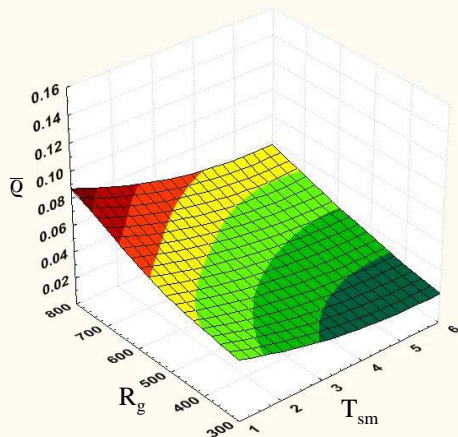
Figure G.4: Influence of R_g and T_{sm} on the \bar{Q} metric for $N_G = 30$



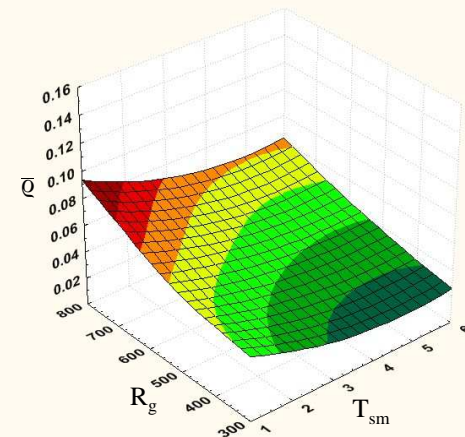
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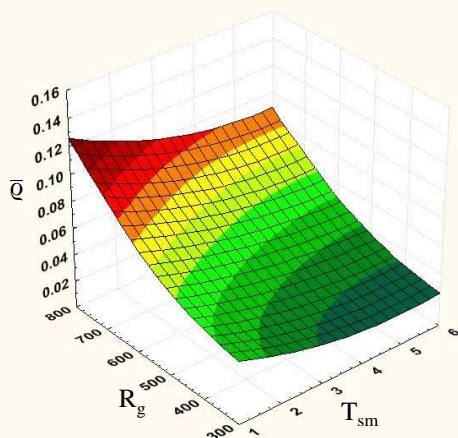
(b) EEMACOMH



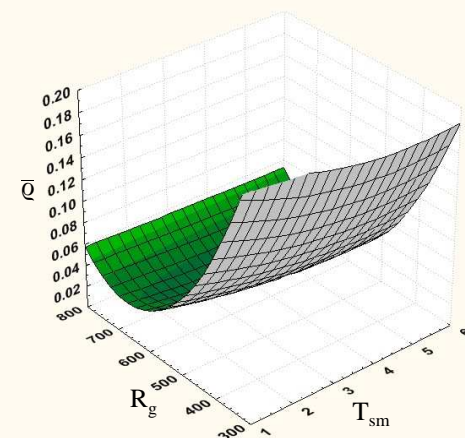
(c) EEMMASMP



(d) EEMMASMH

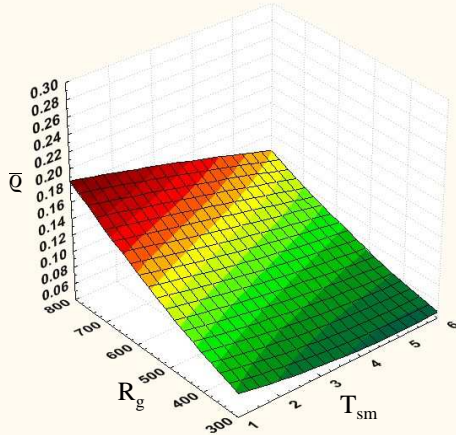


(e) EEMACOMC

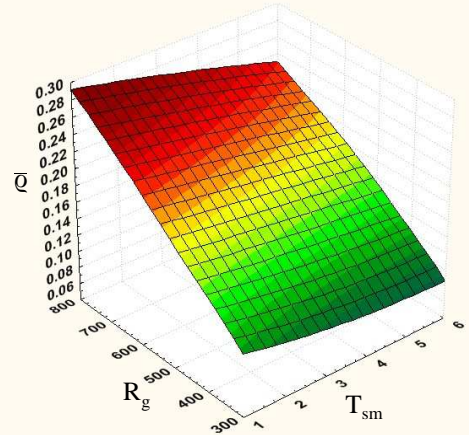


(f) NSGA-II-MPA

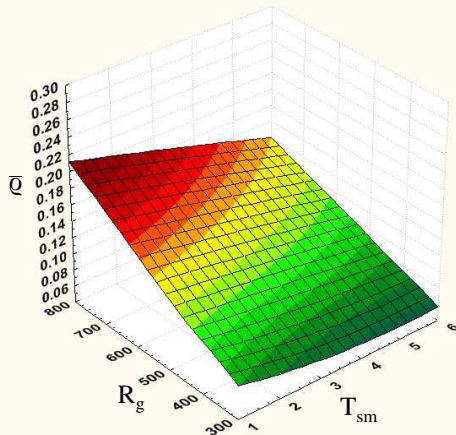
Figure G.5: Influence of R_g and T_{sm} on the \bar{Q} metric for $N_G = 100$



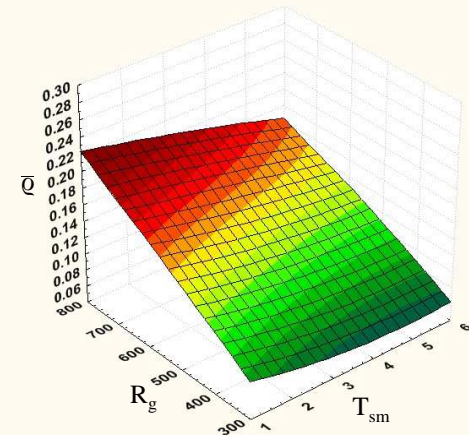
(a) EEMACOMP



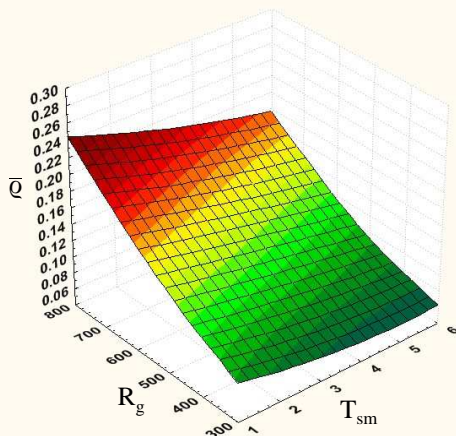
(b) EEMACOMH



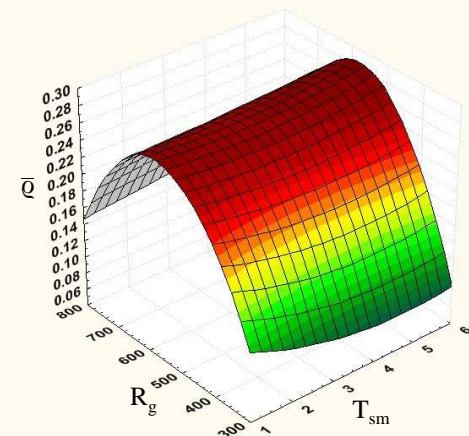
(c) EEMMASMP



(d) EEMMASMH

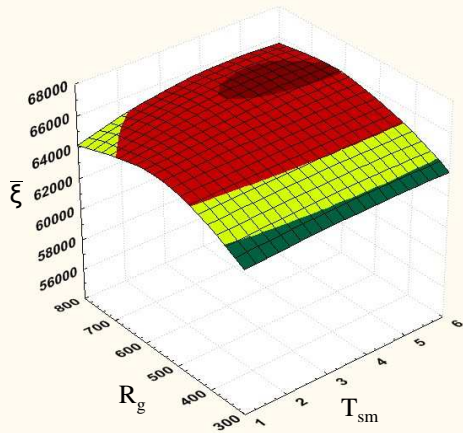


(e) EEMACOMC

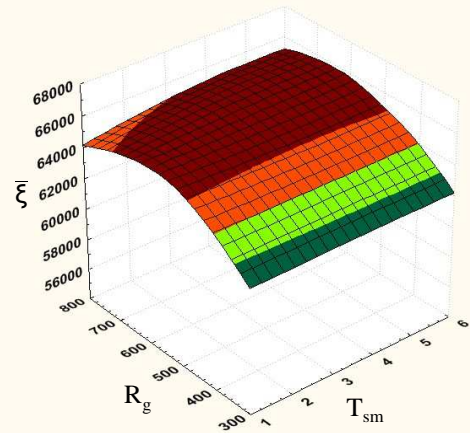


(f) NSGA-II-MPA

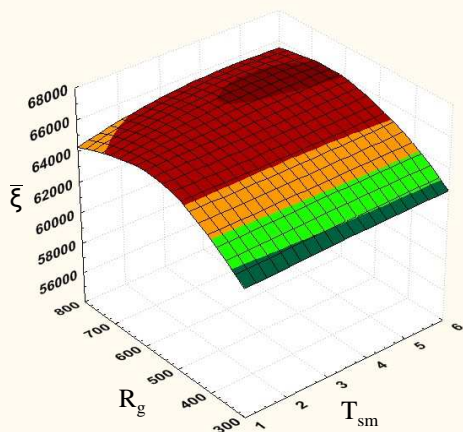
Figure G.6: Influence of R_g and T_{sm} on the \bar{Q} metric for $N_G = 300$



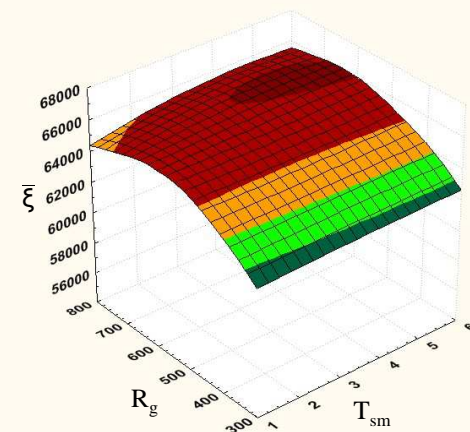
(a) EEMACOMP



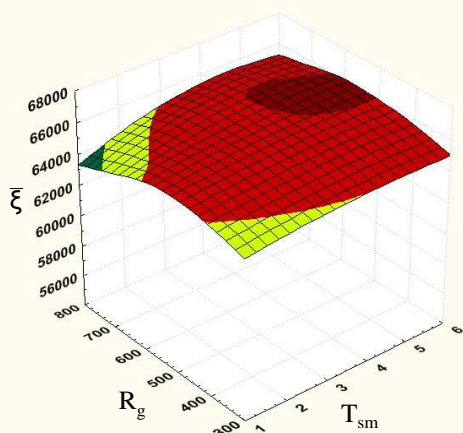
(b) EEMACOMH



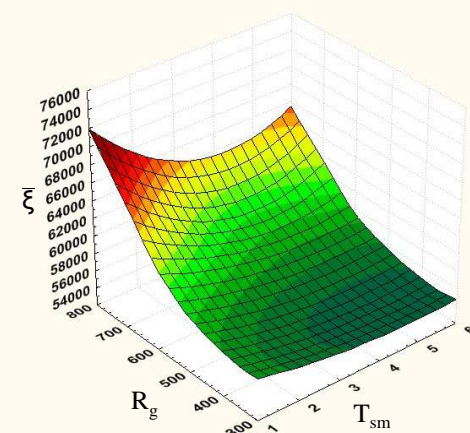
(c) EEMMASMP



(d) EEMMASMH

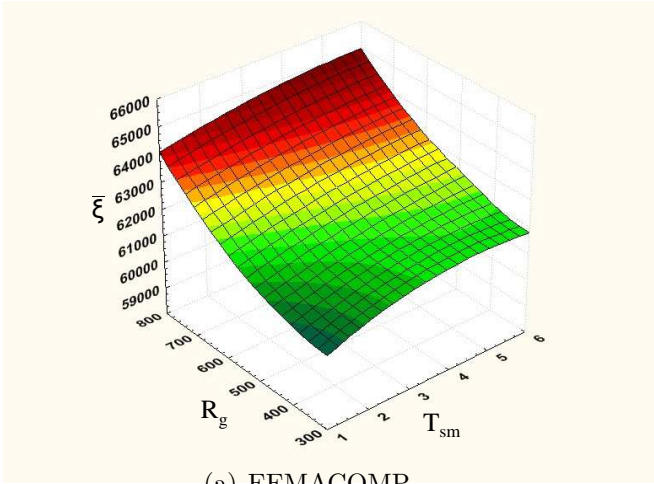


(e) EEMACOMC

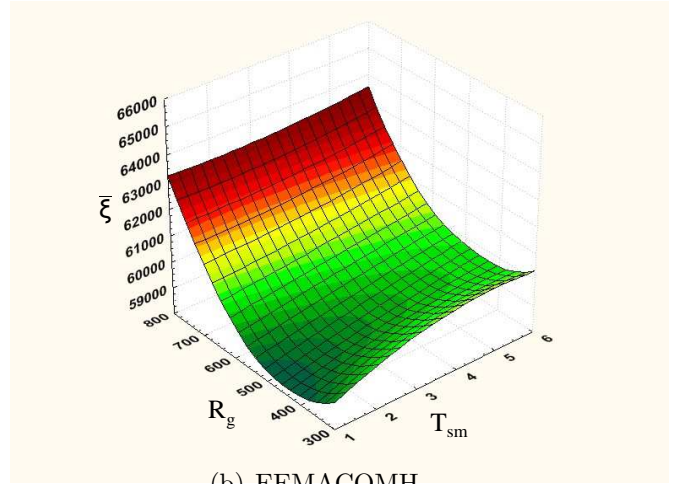


(f) NSGA-II-MPA

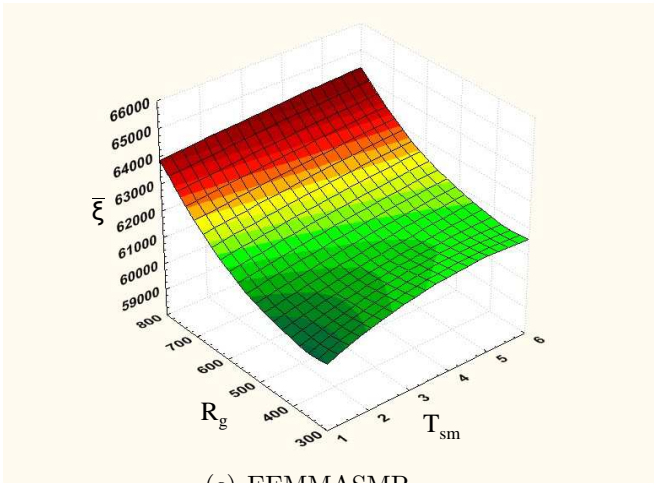
Figure G.7: Influence of R_g and T_{sm} on the $\bar{\xi}$ metric for $N_G = 30$



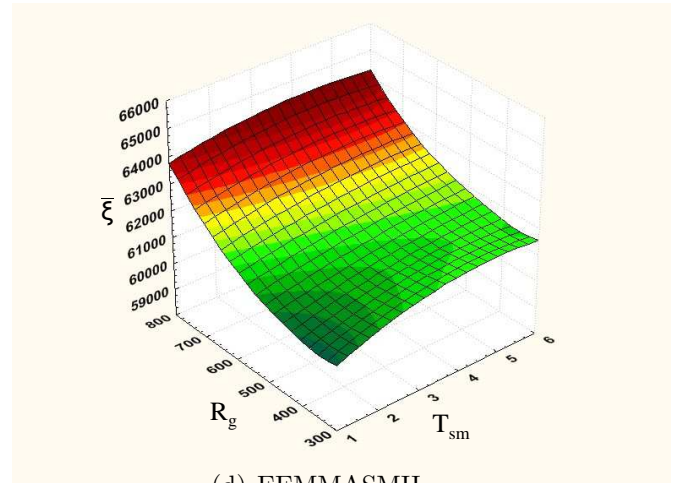
(a) EEMACOMP



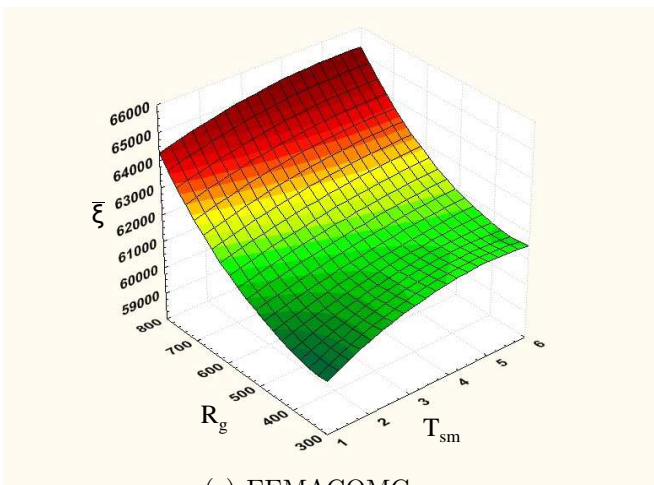
(b) EEMACOMH



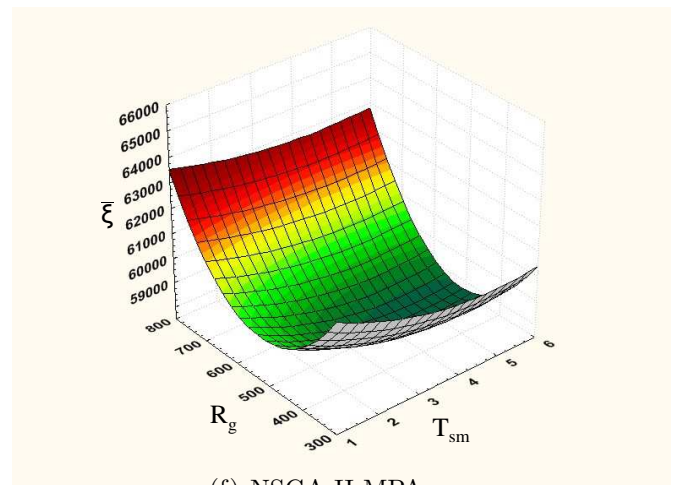
(c) EEMMASMP



(d) EEMMASMH



(e) EEMACOMC



(f) NSGA-II-MPA

Figure G.8: Influence of R_g and T_{sm} on the $\bar{\xi}$ metric for $N_G = 100$

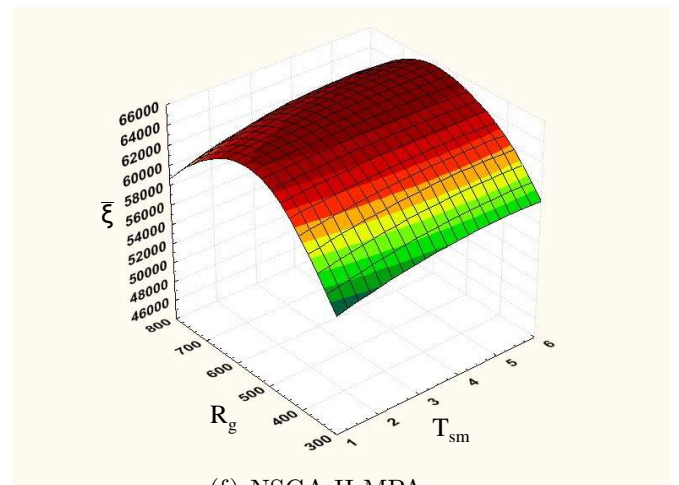
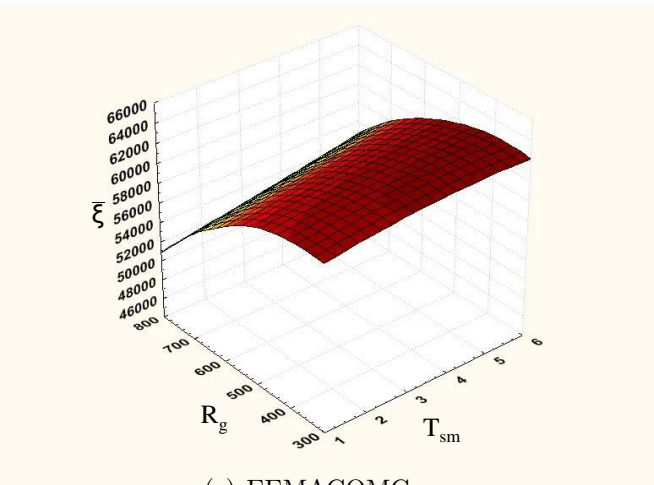
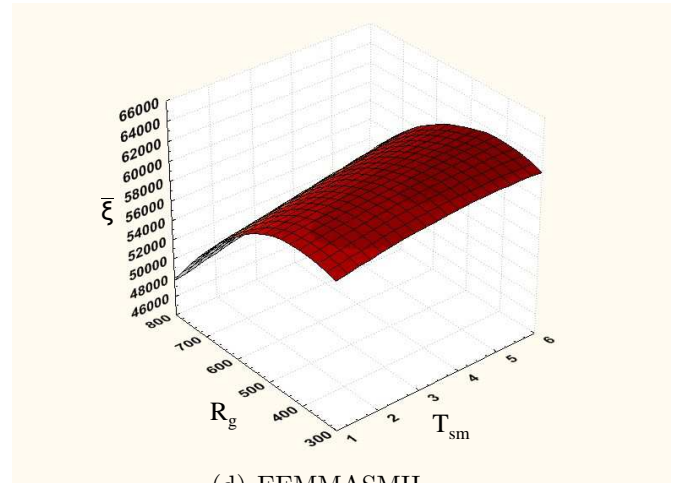
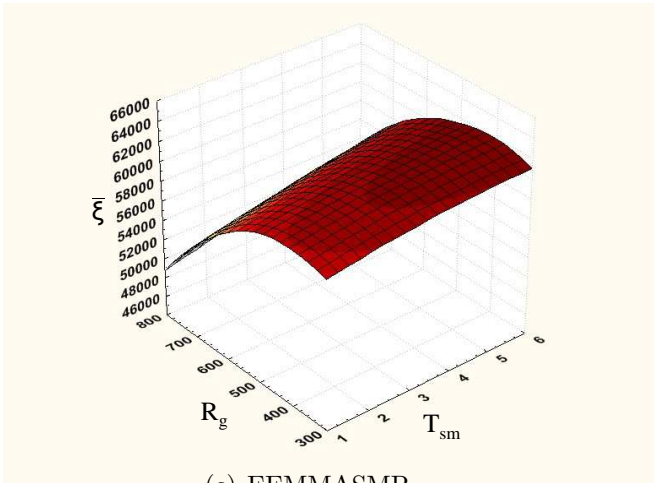
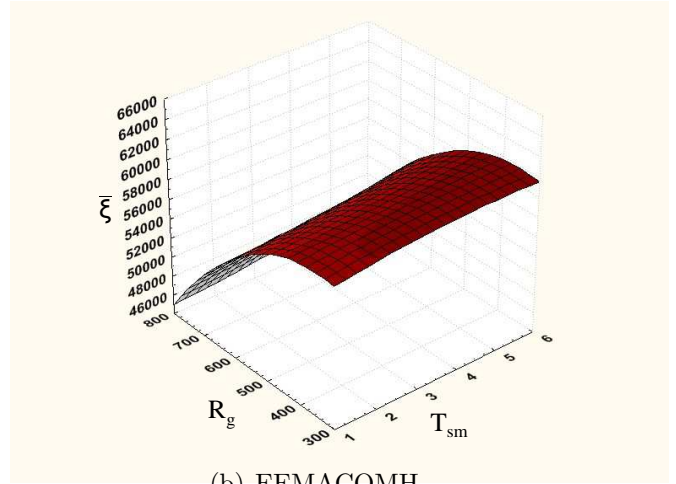
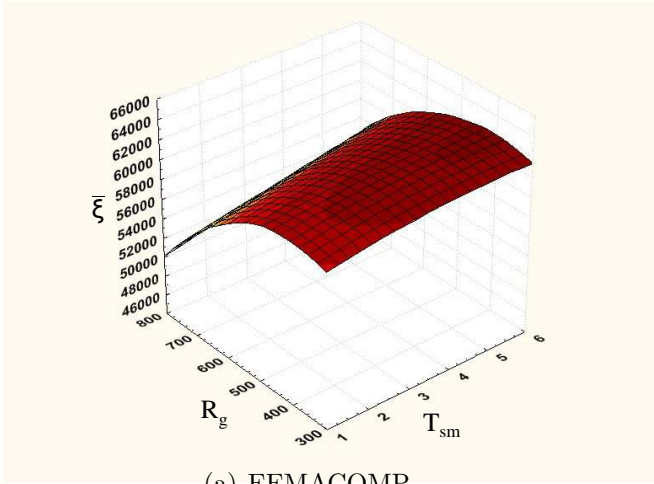


Figure G.9: Influence of R_g and T_{sm} on the $\bar{\xi}$ metric for $N_G = 300$

Appendix H

Results of the Mann-Whitney U Test

This appendix contains the results of the Mann-Whitney U test for each pair of algorithms to be compared. Results are visualised using the FluxViz graphs. Each graph contains 4 axis. The first axis represents the change frequency, T_{sm} , the second axis represents the change severity, R_g , and the third axis represents the number of nodes, N_G . The last axis represents the results of the Mann-Whitney U test one for each of the T_{sm} , R_g and N_G combinations. Each combination corresponds to a specific scenario. If the result of the Mann-Whitney U test for each scenario has the value of zero then there is no significant difference between the two algorithms to be compared. The symbol “ \approx ” is displayed next to the value of zero. If the result of the Mann-Whitney U test has the value of one then the first algorithm is significantly better than the second algorithm for the specific scenario. The symbol “ $>$ ” is displayed next to the value of one.

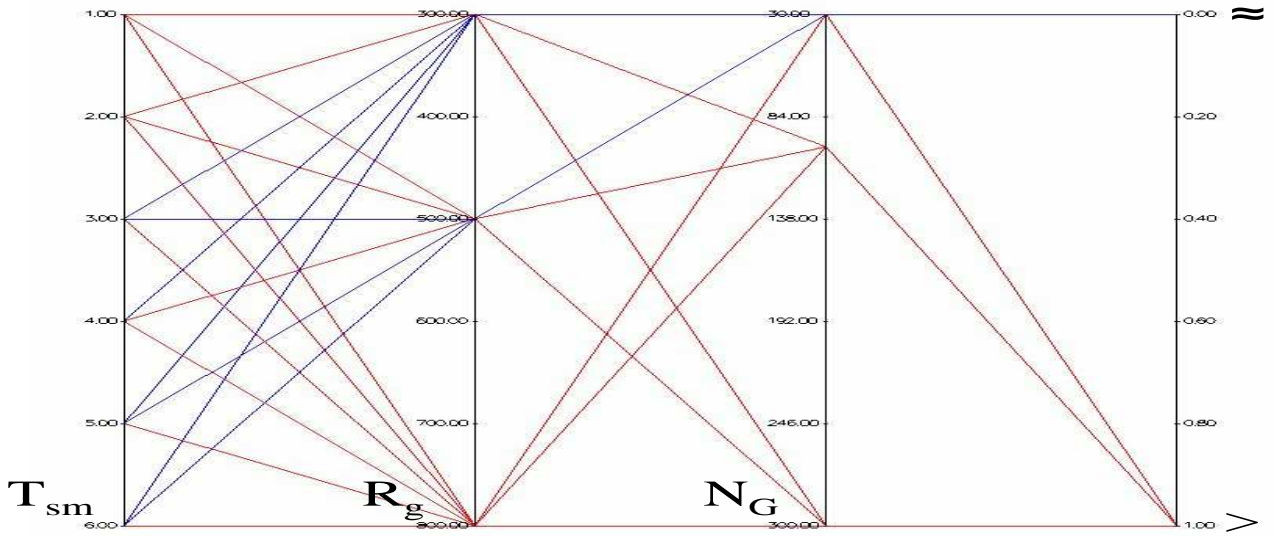


Figure H.1: Comparing the EEMACOMP against the EEMACOMH algorithm with regard to the \bar{n}_{alg} metric using the Mann-Whitney U test

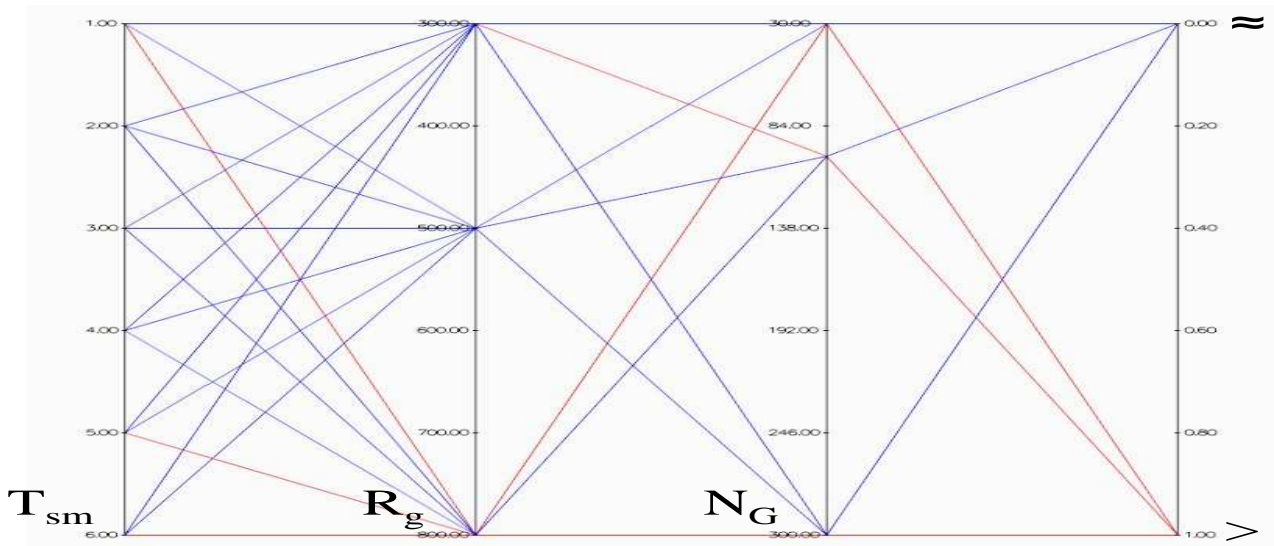


Figure H.2: Comparing the EEMMASMP against the EEMMASMH algorithm with regard to the \bar{n}_{alg} metric using the Mann-Whitney U test

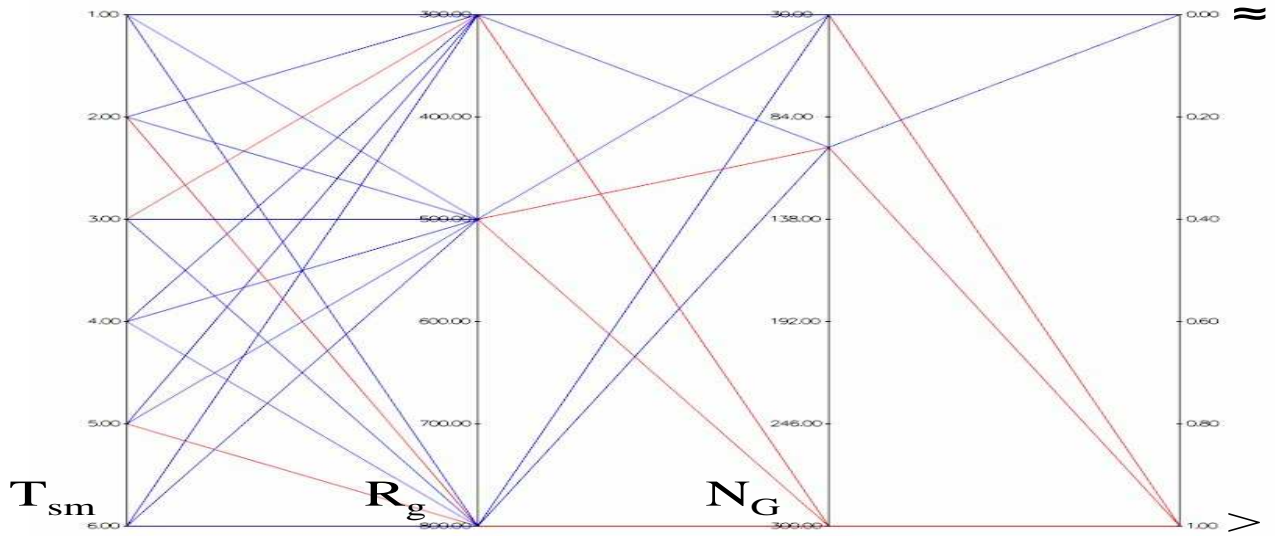


Figure H.3: Comparing the EEMACOMP against the EEMACOMC algorithm with regard to the \bar{n}_{alg} metric using the Mann-Whitney U test

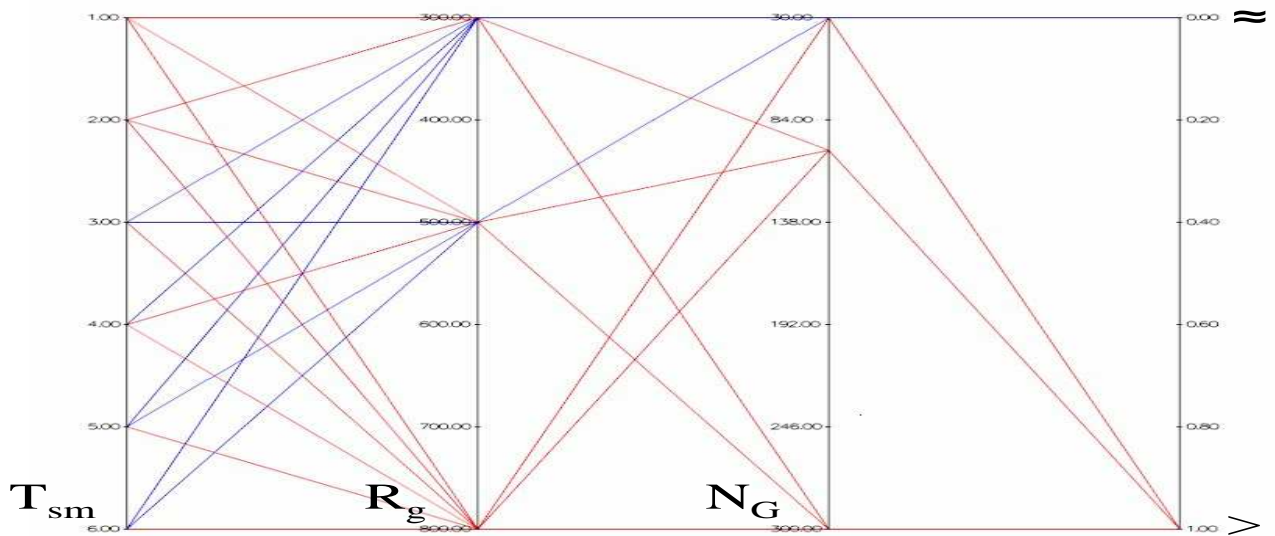


Figure H.4: Comparing the EEMACOMC against the EEMACOMH algorithm with regard to the \bar{n}_{alg} metric using the Mann-Whitney U test

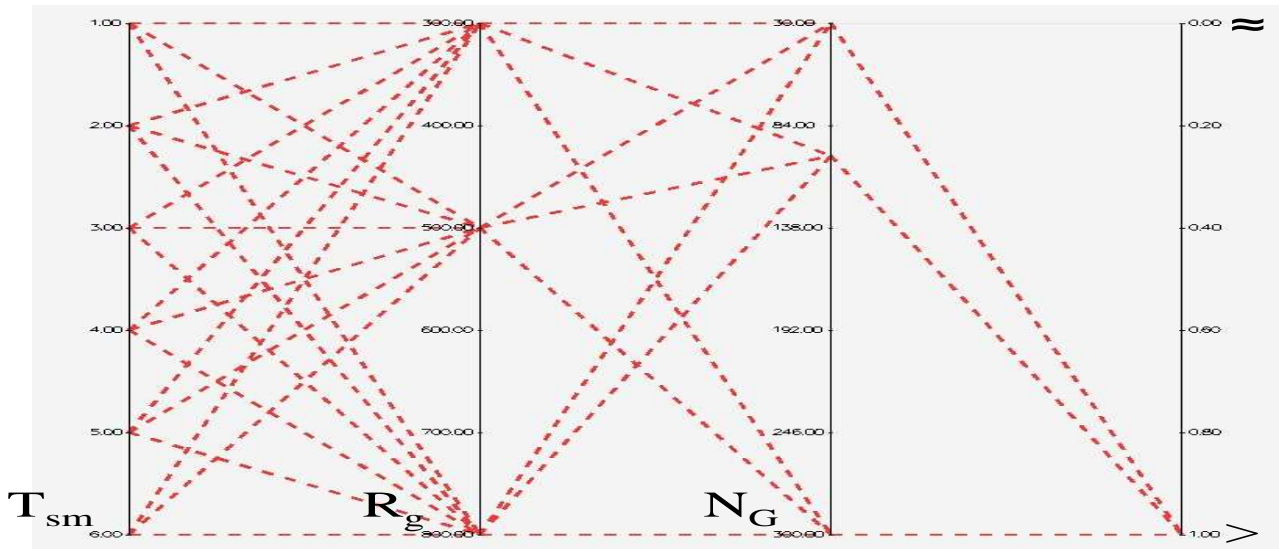


Figure H.5: Comparing the EEMACOMP against the NSGA-II-MPA algorithm with regard to the \bar{n}_{alg} metric using the Mann-Whitney U test

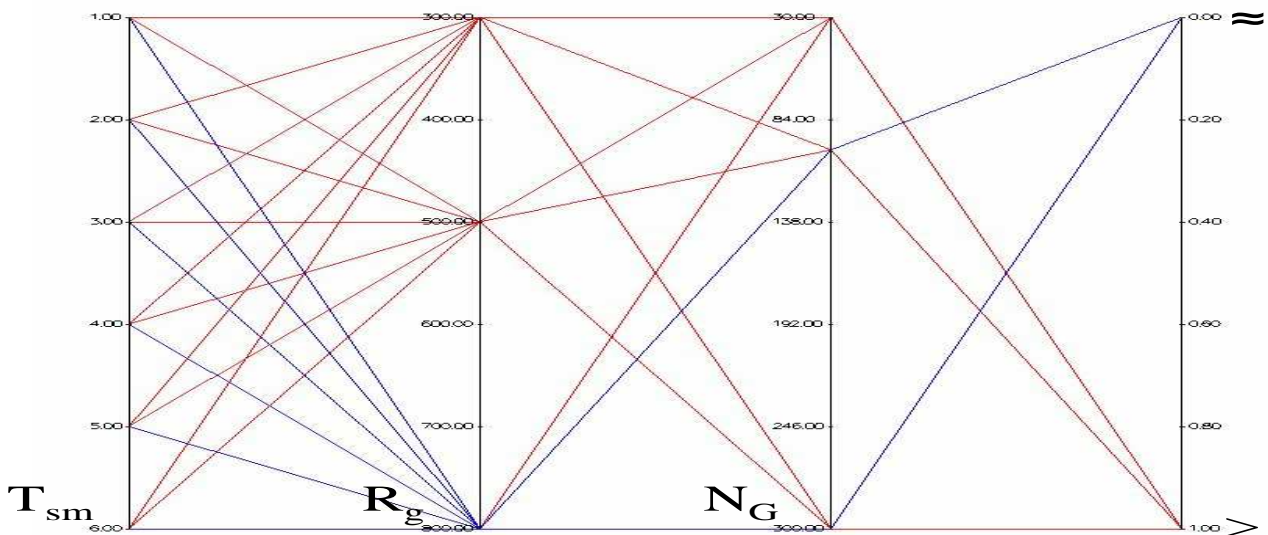


Figure H.6: Comparing the EEMACOMH against the NSGA-II-MPA algorithm with regard to the \bar{n}_{alg} metric using the Mann-Whitney U test

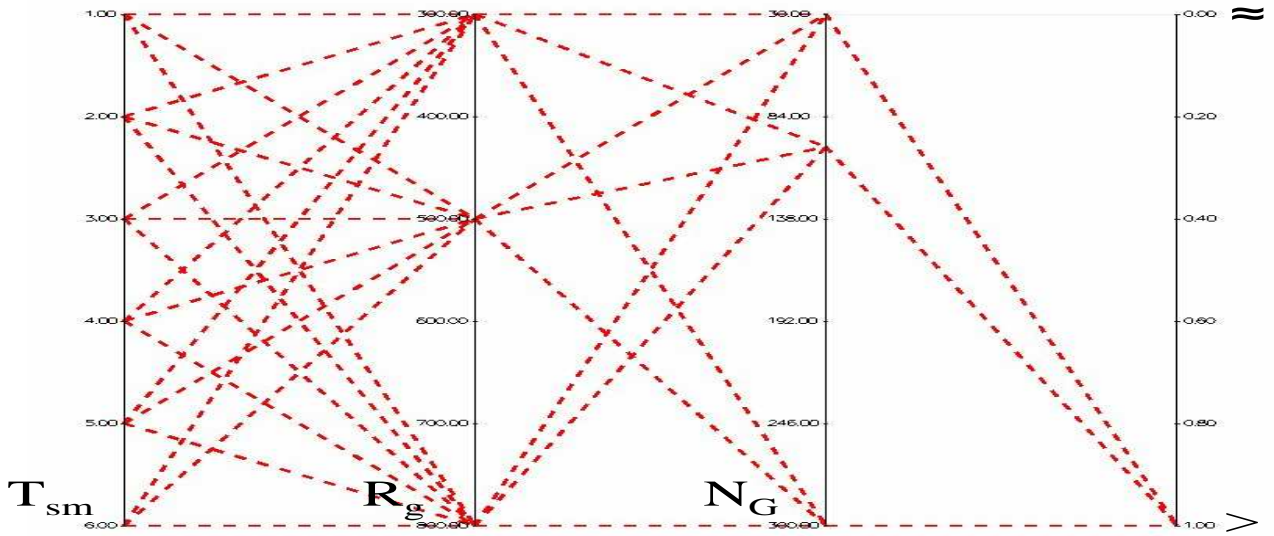


Figure H.7: Comparing the EEMMASMP against the NSGA-II-MPA algorithm with regard to the \bar{n}_{alg} metric using the Mann-Whitney U test

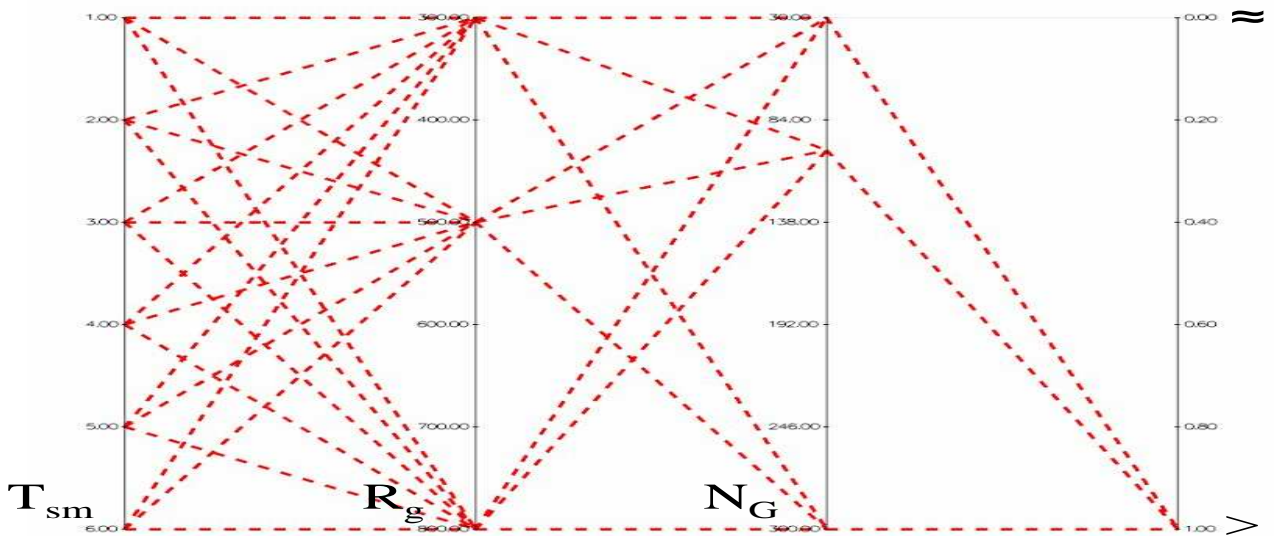


Figure H.8: Comparing the EEMMASMH against the NSGA-II-MPA algorithm with regard to the \bar{n}_{alg} metric using the Mann-Whitney U test

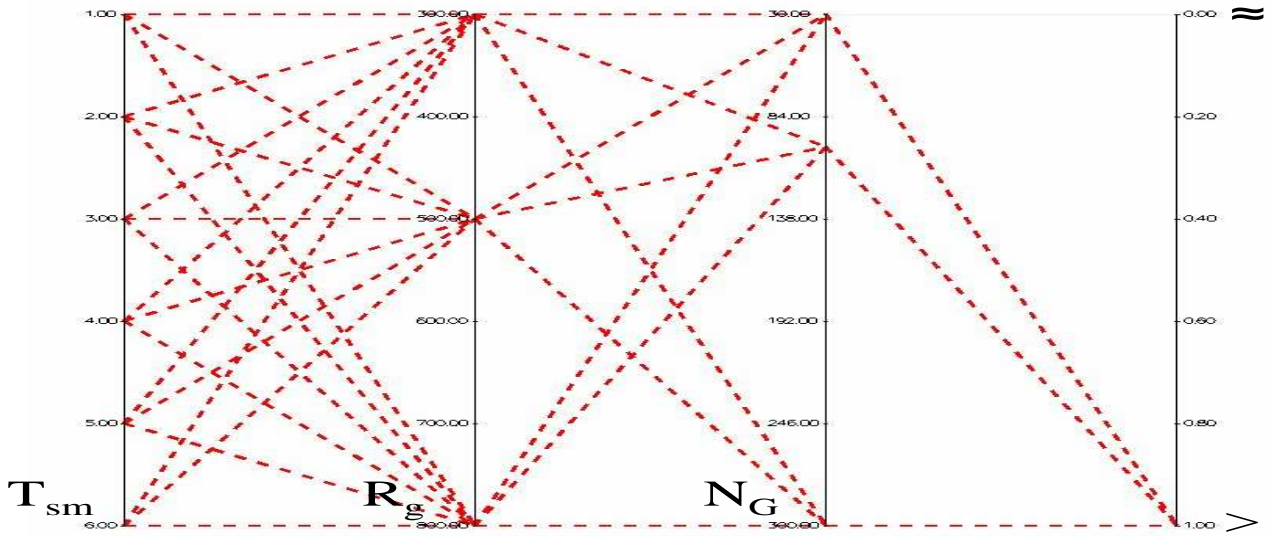


Figure H.9: Comparing the EEMACOMC against the NSGA-II-MPA algorithm with regard to the \bar{n}_{alg} metric using the Mann-Whitney U test

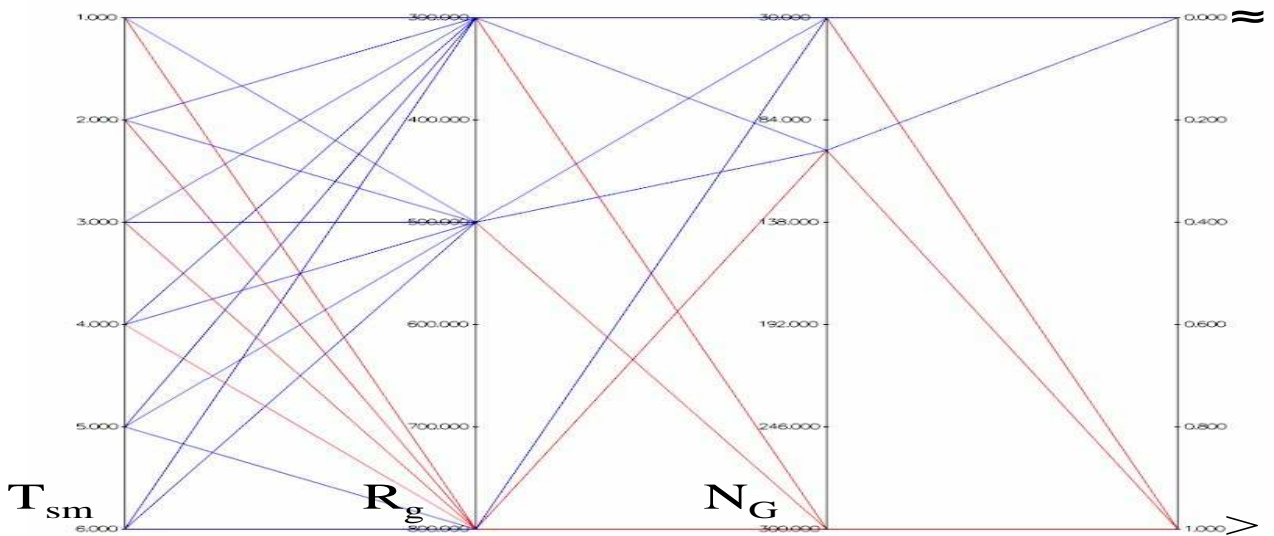


Figure H.10: Comparing the EEMACOMP against the EEMMASMP algorithm with regard to the \bar{n}_{alg} metric using the Mann-Whitney U test

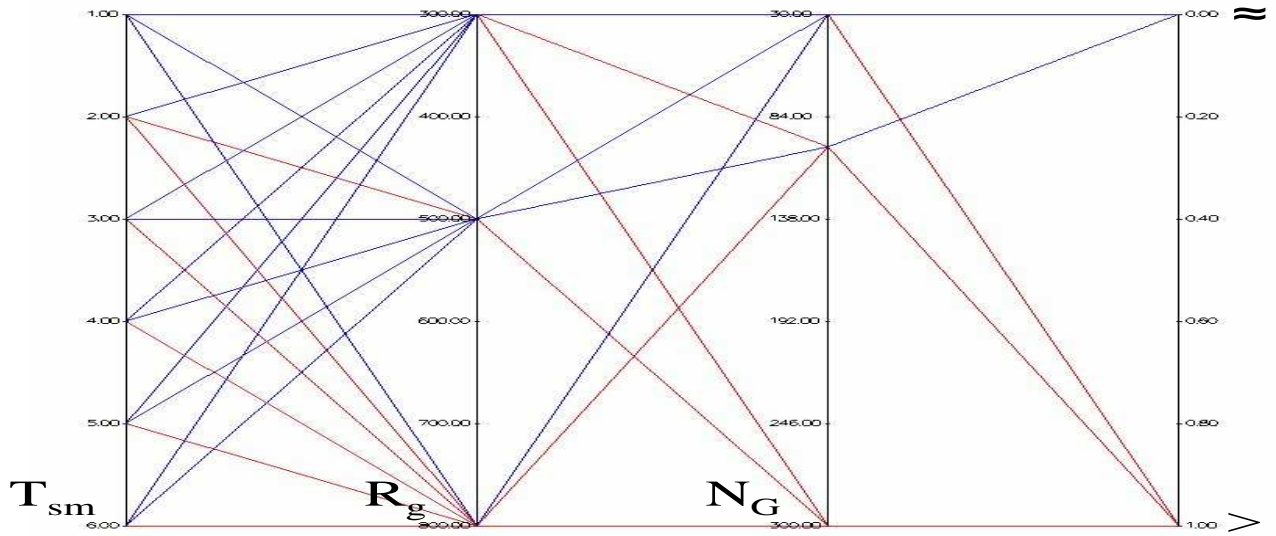


Figure H.11: Comparing the EEMACOMP against the EEMMASMH algorithm with regard to the \bar{n}_{alg} metric using the Mann-Whitney U test

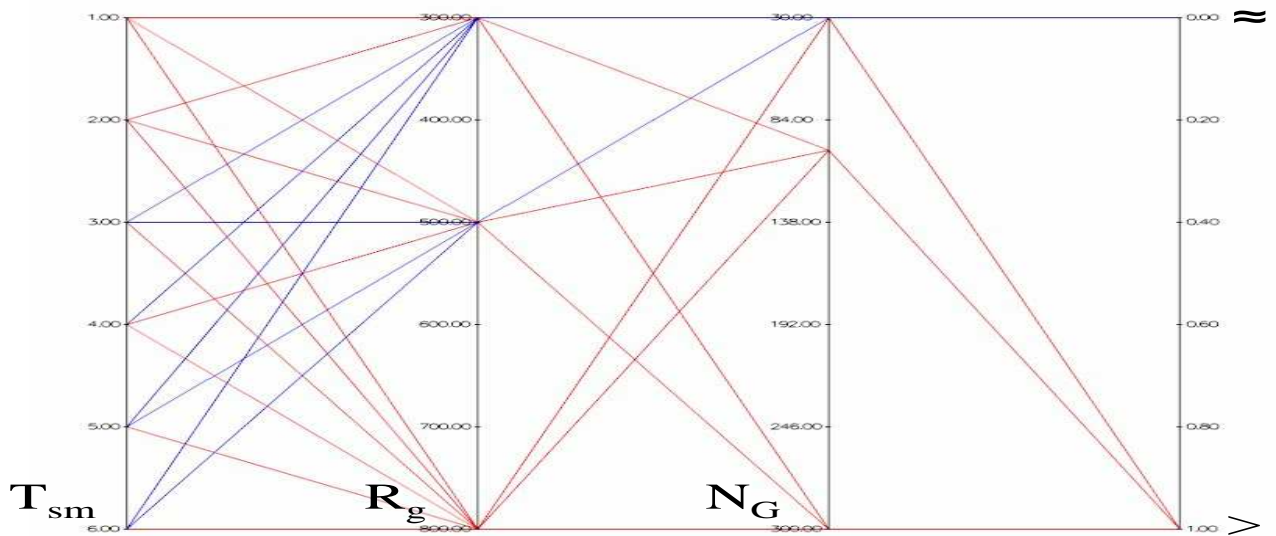


Figure H.12: Comparing the EEMMASMH against the EEMACOMH algorithm with regard to the \bar{n}_{alg} metric using the Mann-Whitney U test

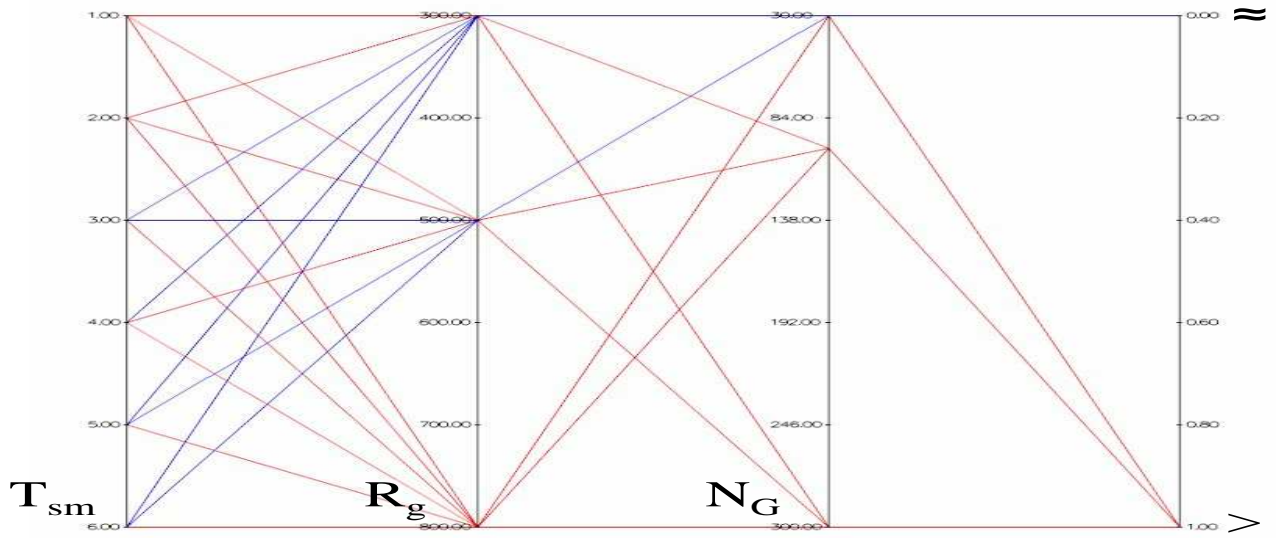


Figure H.13: Comparing the EEMMASMP against the EEMACOMH algorithm with regard to the \bar{n}_{alg} metric using the Mann-Whitney U test

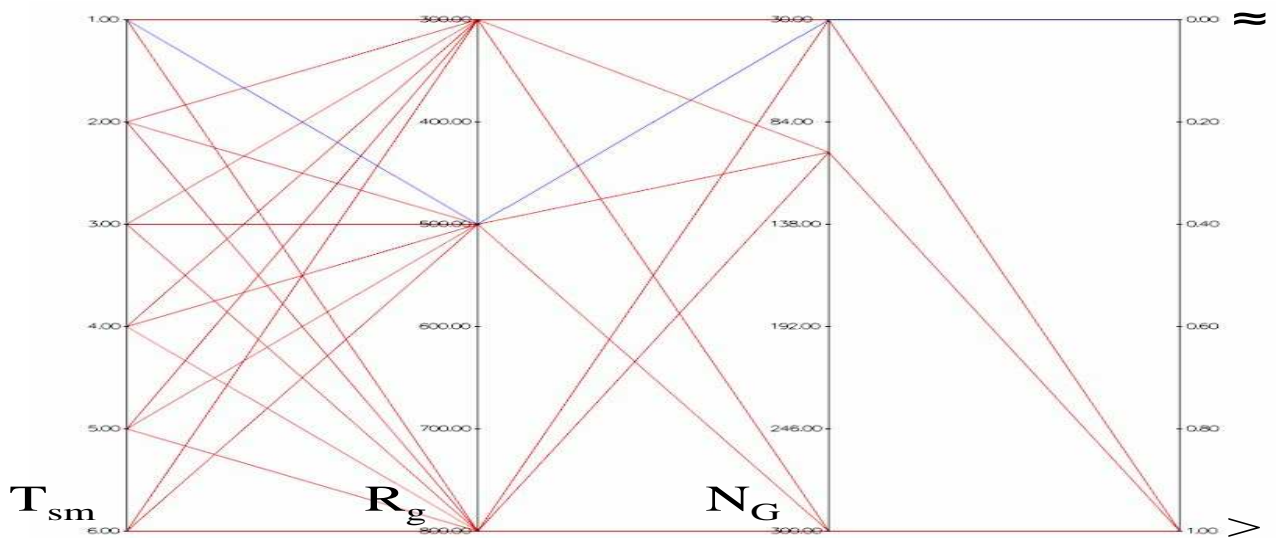


Figure H.14: Comparing the EEMACOMP against the EEMACOMH algorithm with regard to the \bar{q} metric using the Mann-Whitney U test

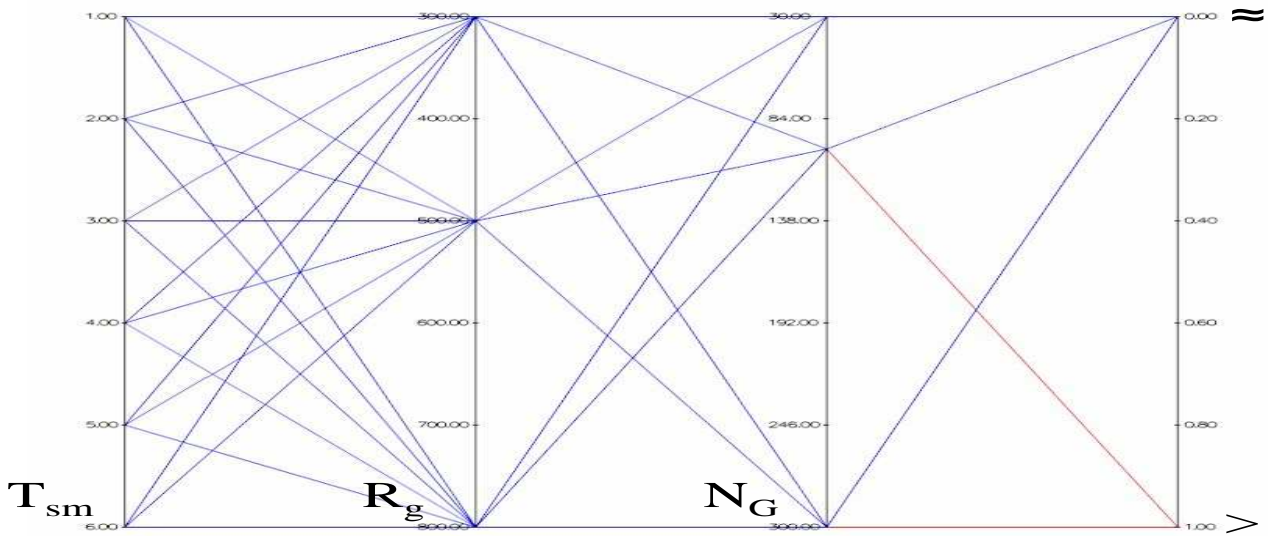


Figure H.15: Comparing the EEMMASMP against the EEMMASMH algorithm with regard to the $\bar{\rho}$ metric using the Mann-Whitney U test

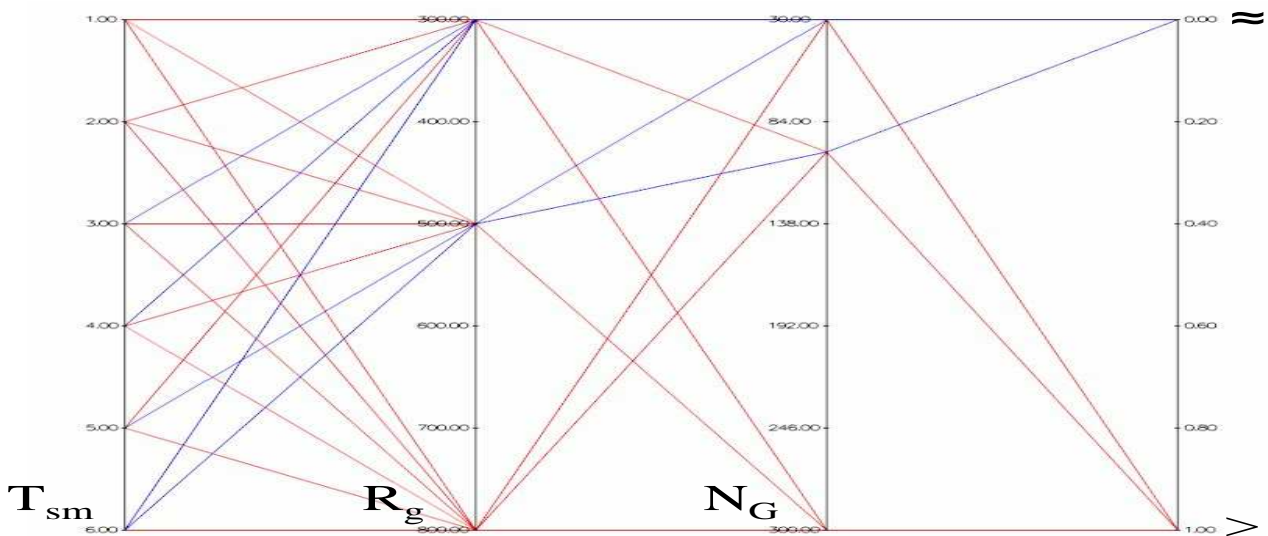


Figure H.16: Comparing the EEMACOMP against the EEMACOMC algorithm with regard to the $\bar{\rho}$ metric using the Mann-Whitney U test

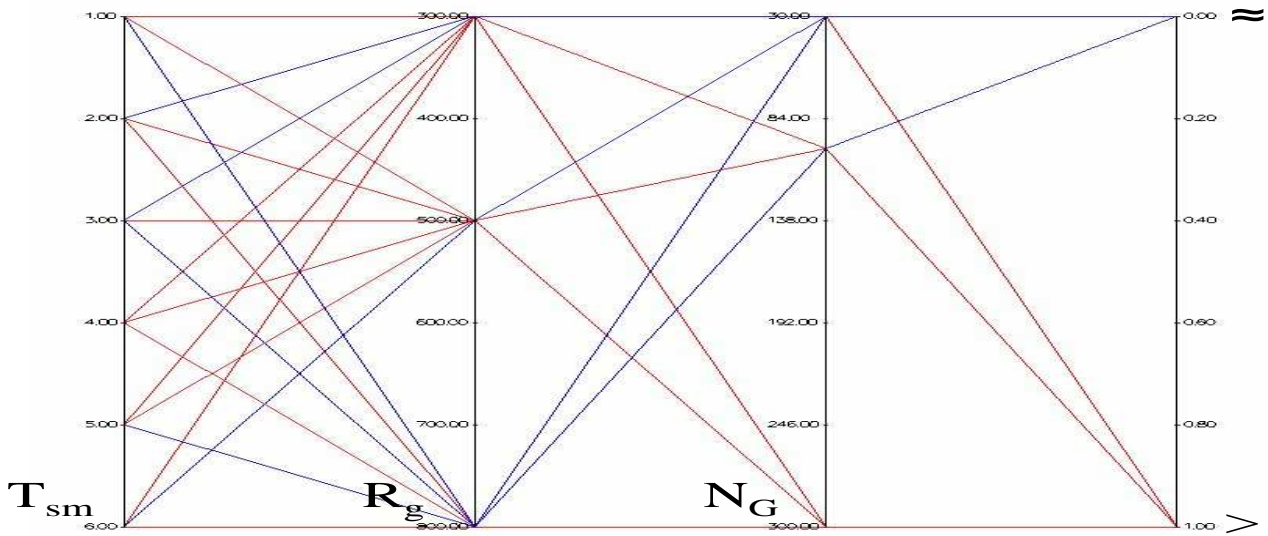


Figure H.17: Comparing the EEMACOMC against the EEMACOMH algorithm with regard to the $\bar{\rho}$ metric using the Mann-Whitney U test

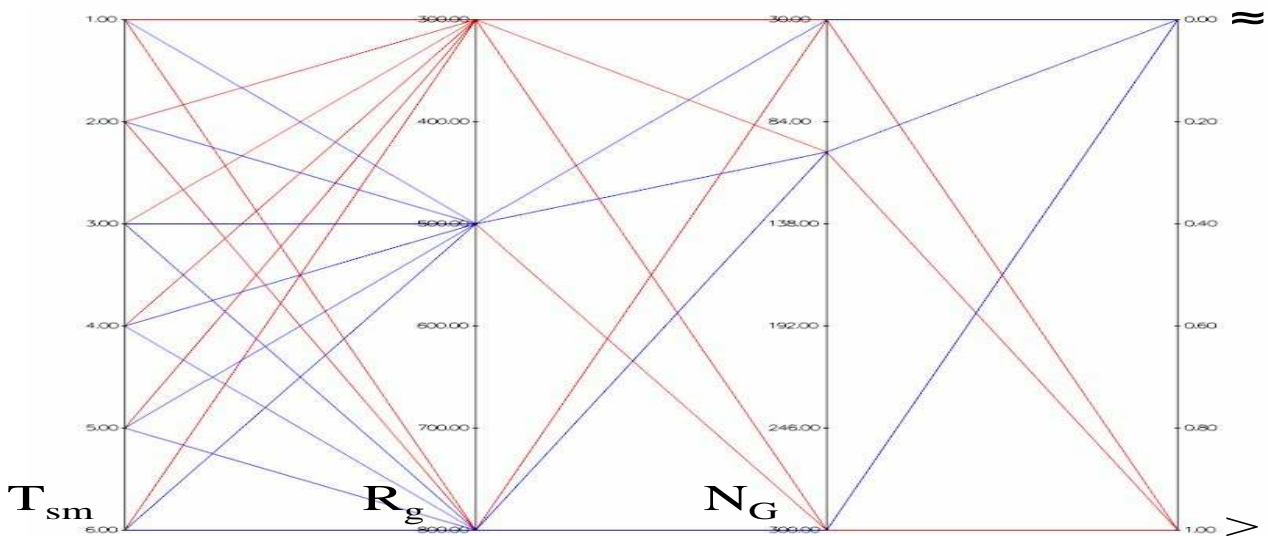


Figure H.18: Comparing the EEMACOMP against the NSGA-II-MPA algorithm with regard to the $\bar{\rho}$ metric using the Mann-Whitney U test

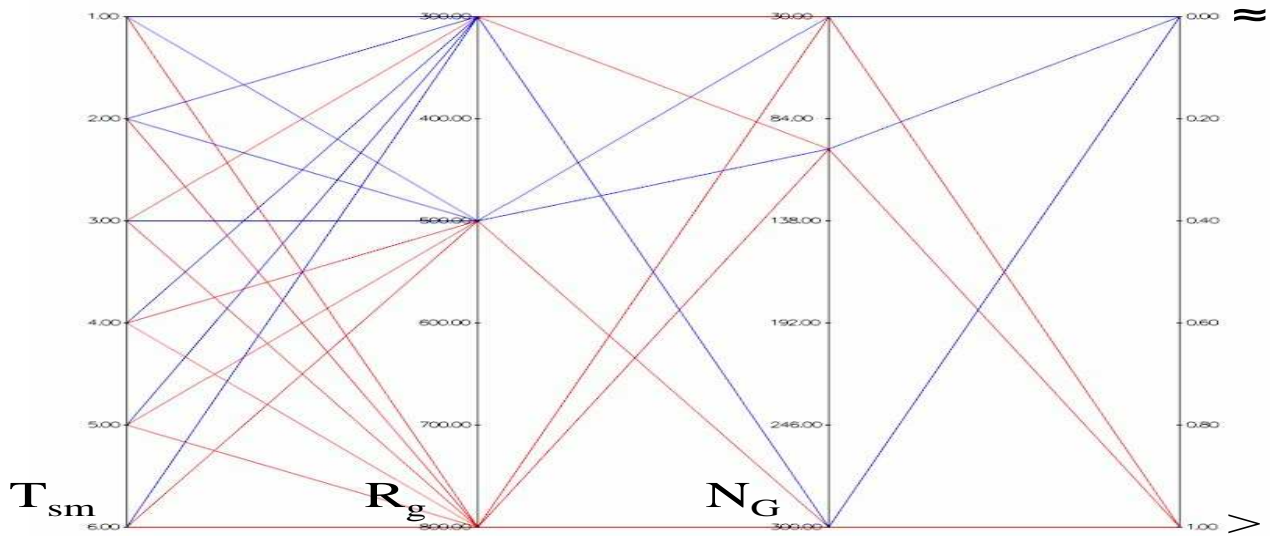


Figure H.19: Comparing the EEMACOMH against the NSGA-II-MPA algorithm with regard to the $\bar{\rho}$ metric using the Mann-Whitney U test

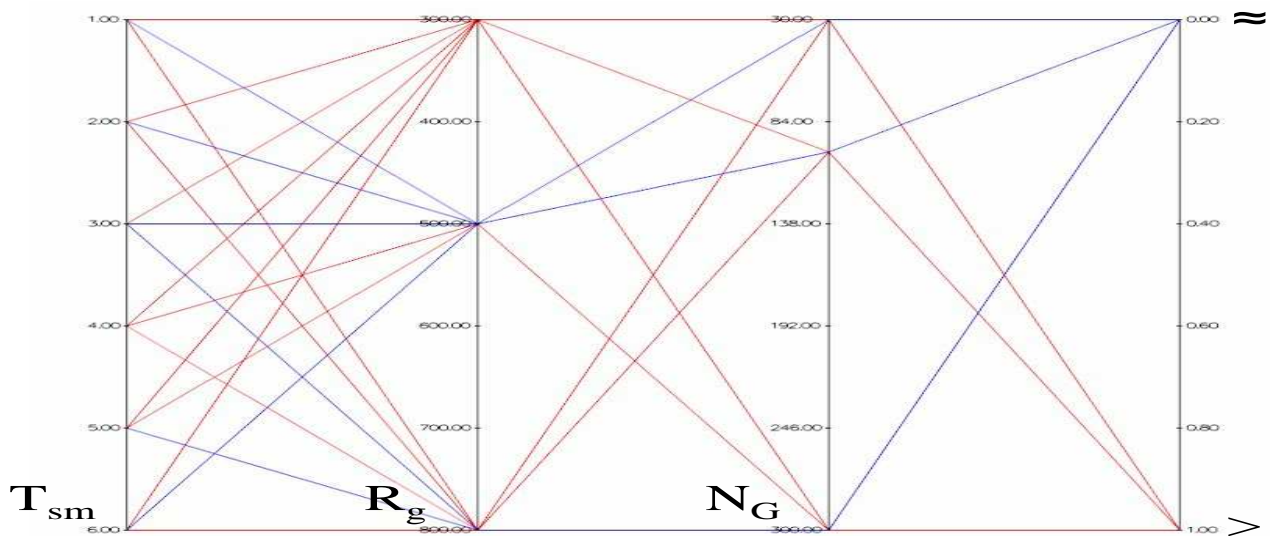


Figure H.20: Comparing the EEMMASMP against the NSGA-II-MPA algorithm with regard to the $\bar{\rho}$ metric using the Mann-Whitney U test

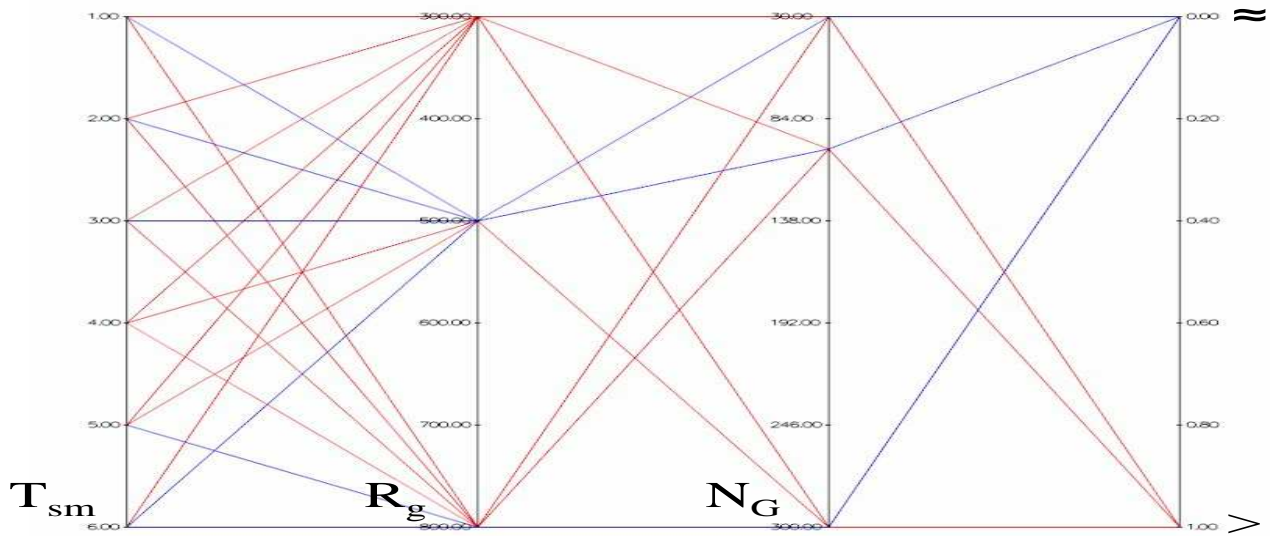


Figure H.21: Comparing the EEMMASMH against the NSGA-II-MPA algorithm with regard to the $\bar{\rho}$ metric using the Mann-Whitney U test

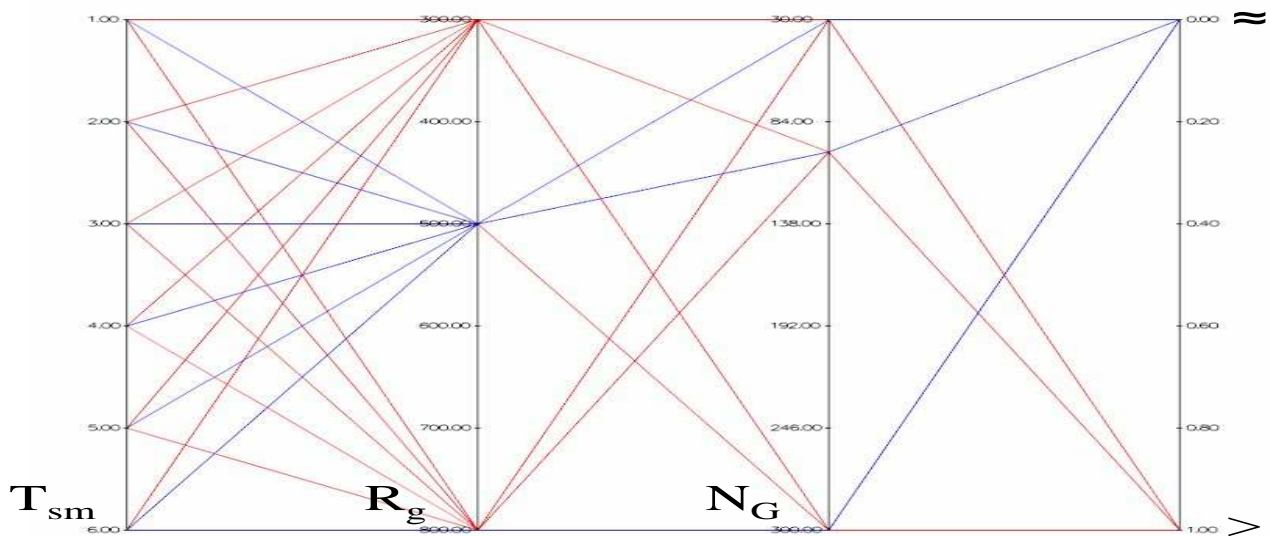


Figure H.22: Comparing the EEMACOMC against the NSGA-II-MPA algorithm with regard to the $\bar{\rho}$ metric using the Mann-Whitney U test

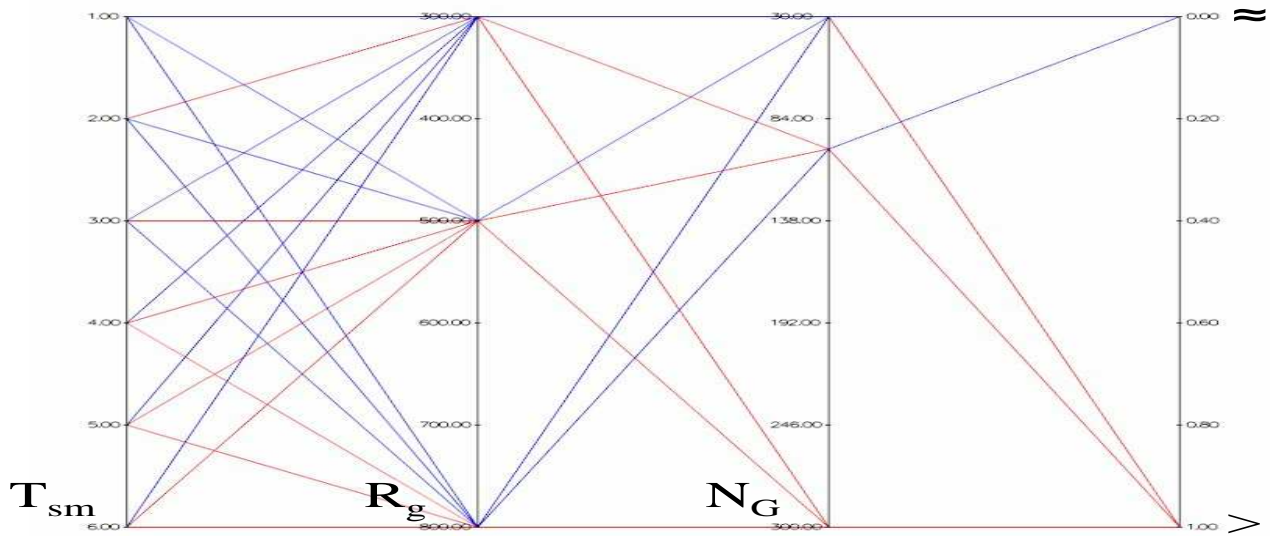


Figure H.23: Comparing the EEMACOMP against the EEMMASMP algorithm with regard to the $\bar{\rho}$ metric using the Mann-Whitney U test

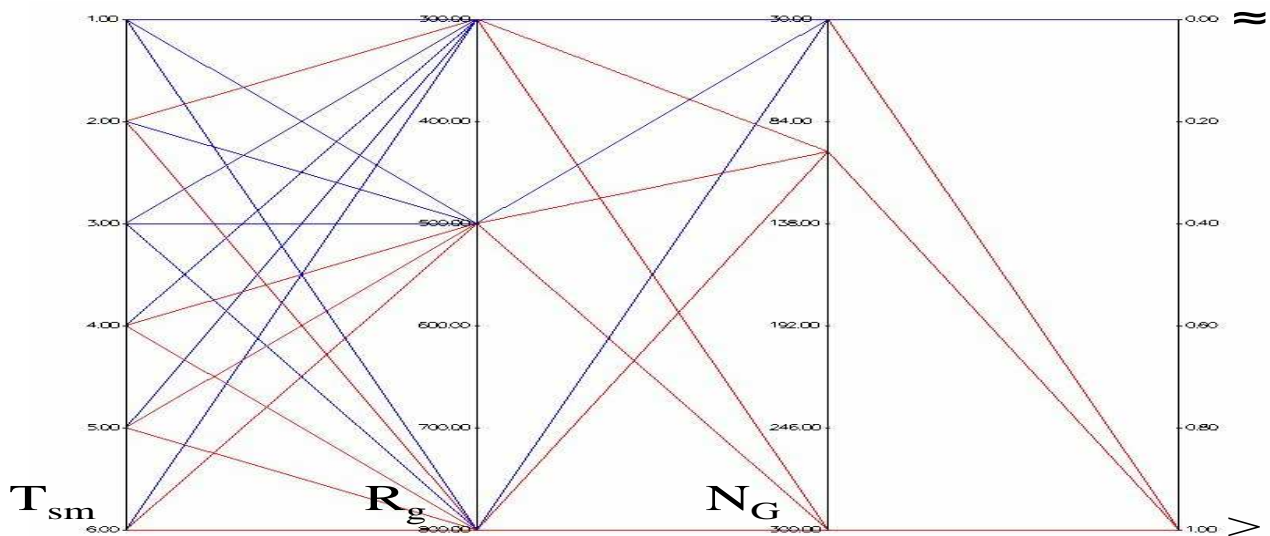


Figure H.24: Comparing the EEMACOMP against the EEMMASMH algorithm with regard to the $\bar{\rho}$ metric using the Mann-Whitney U test

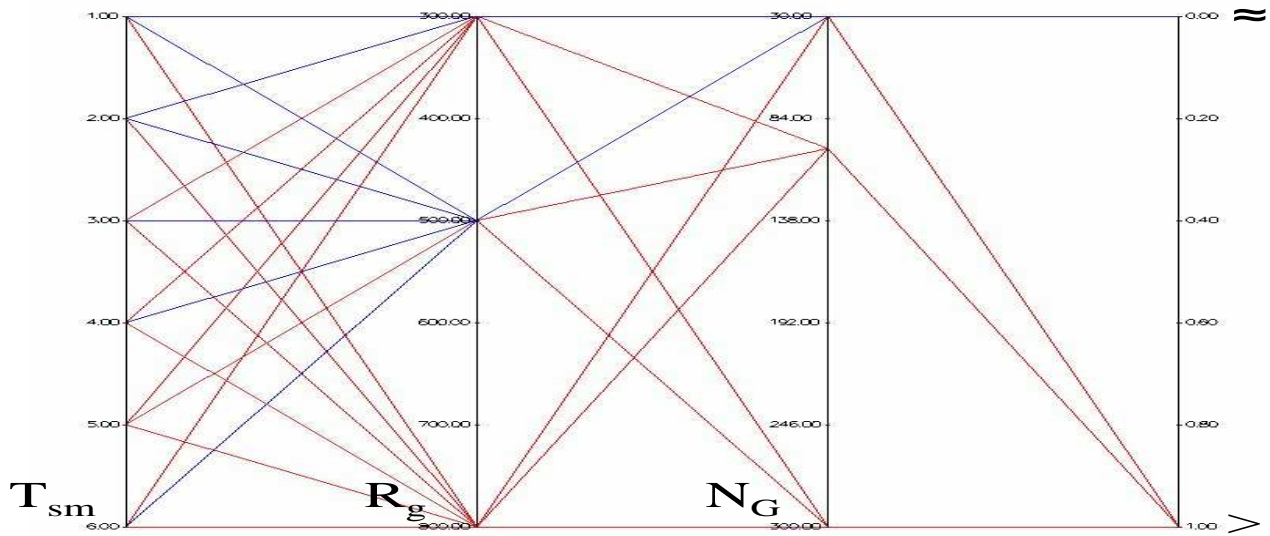


Figure H.25: Comparing the EEMMASMP against the EEMACOMH algorithm with regard to the $\bar{\rho}$ metric using the Mann-Whitney U test

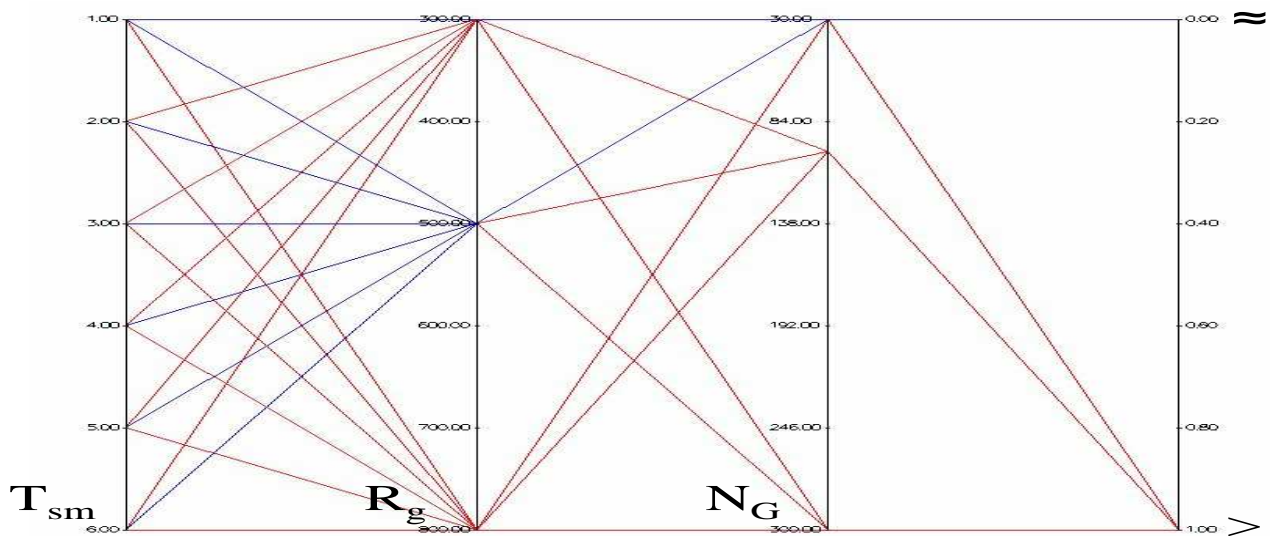


Figure H.26: Comparing the EEMMASMH against the EEMACOMH algorithm with regard to the $\bar{\rho}$ metric using the Mann-Whitney U test

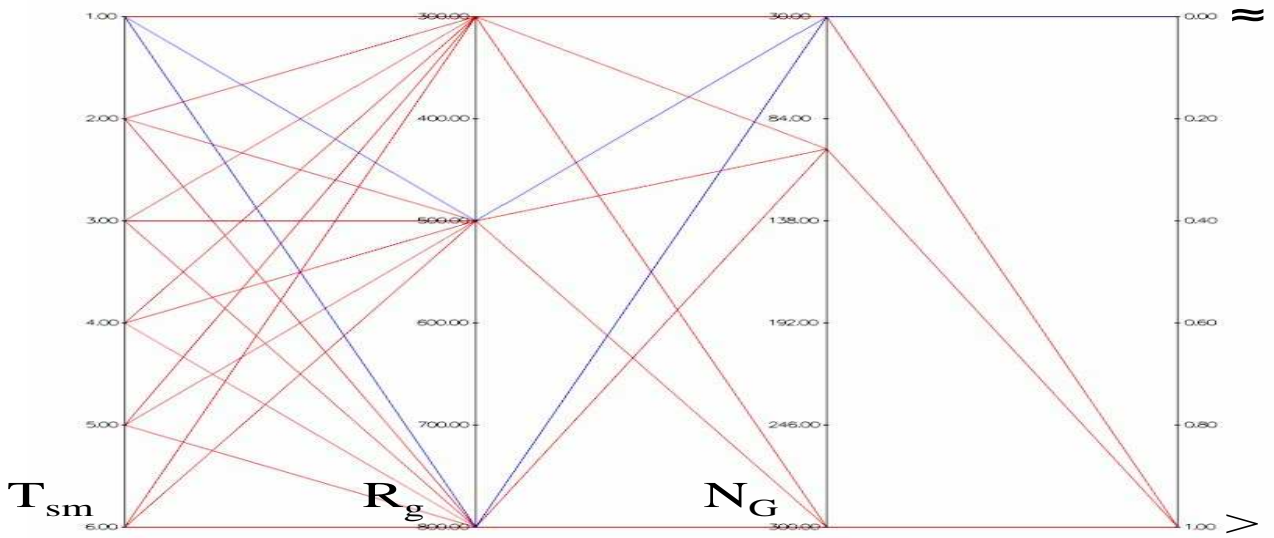


Figure H.27: Comparing the EEMACOMP against the EEMACOMH algorithm with regard to the $\bar{\xi}$ metric using the Mann-Whitney U test

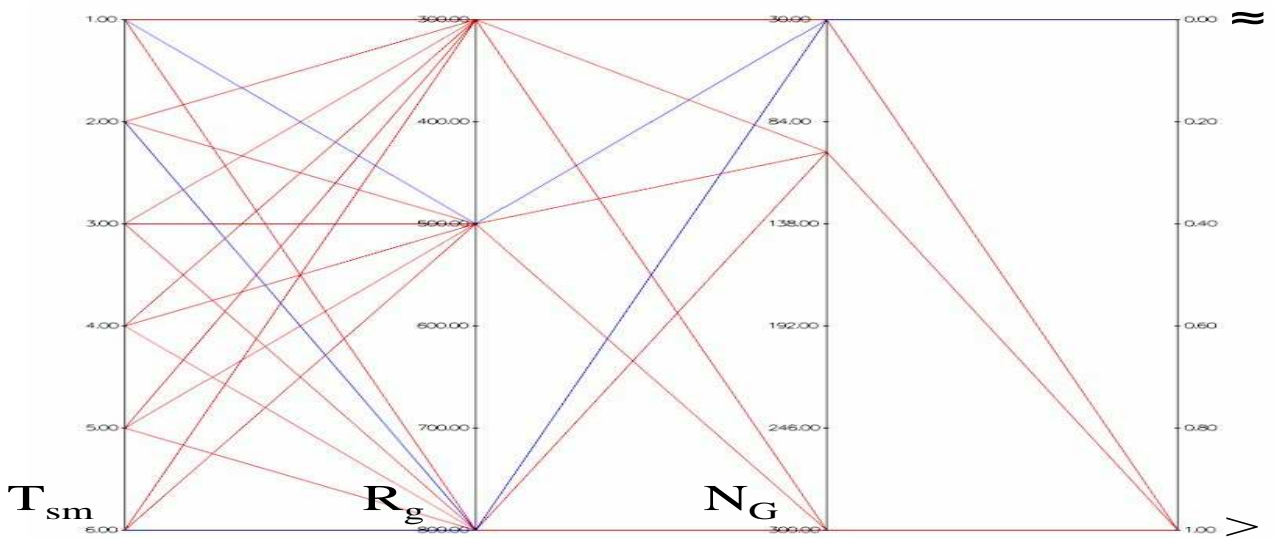


Figure H.28: Comparing the EEMACOMC against the EEMACOMH algorithm with regard to the $\bar{\xi}$ metric using the Mann-Whitney U test

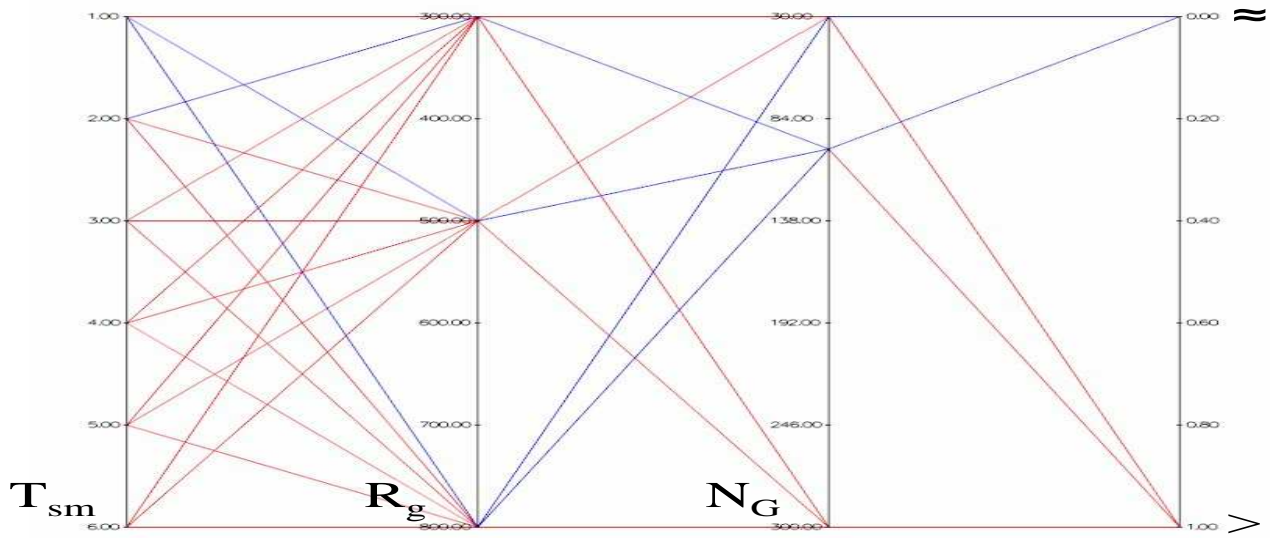


Figure H.29: Comparing the EEMACOMP against the NSGA-II-MPA algorithm with regard to the ξ metric using the Mann-Whitney U test

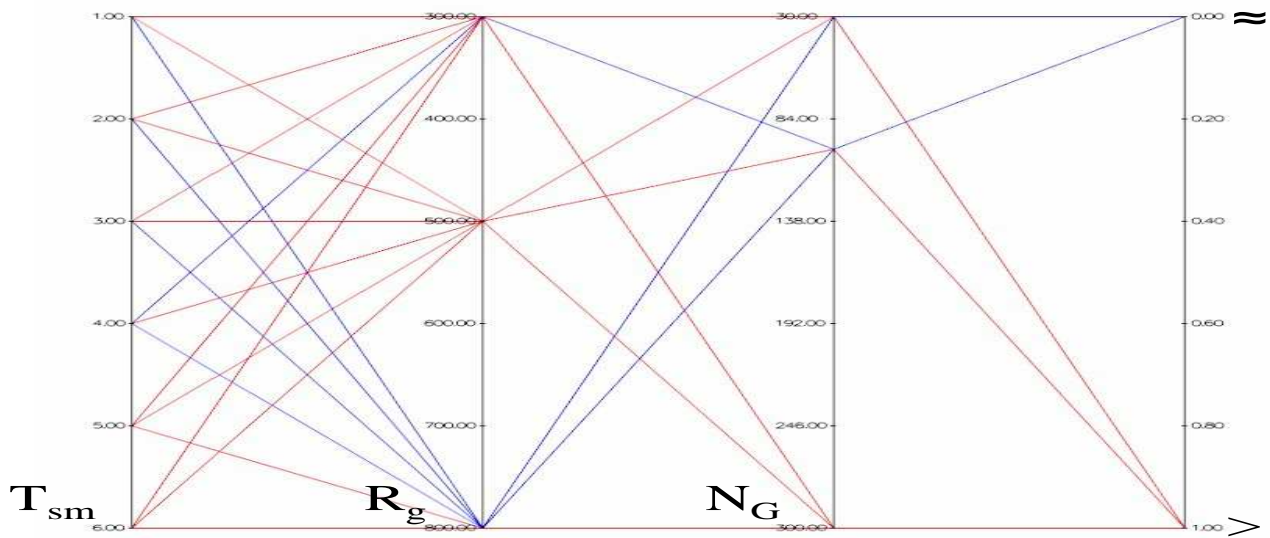


Figure H.30: Comparing the EEMACOMH against the NSGA-II-MPA algorithm with regard to the ξ metric using the Mann-Whitney U test

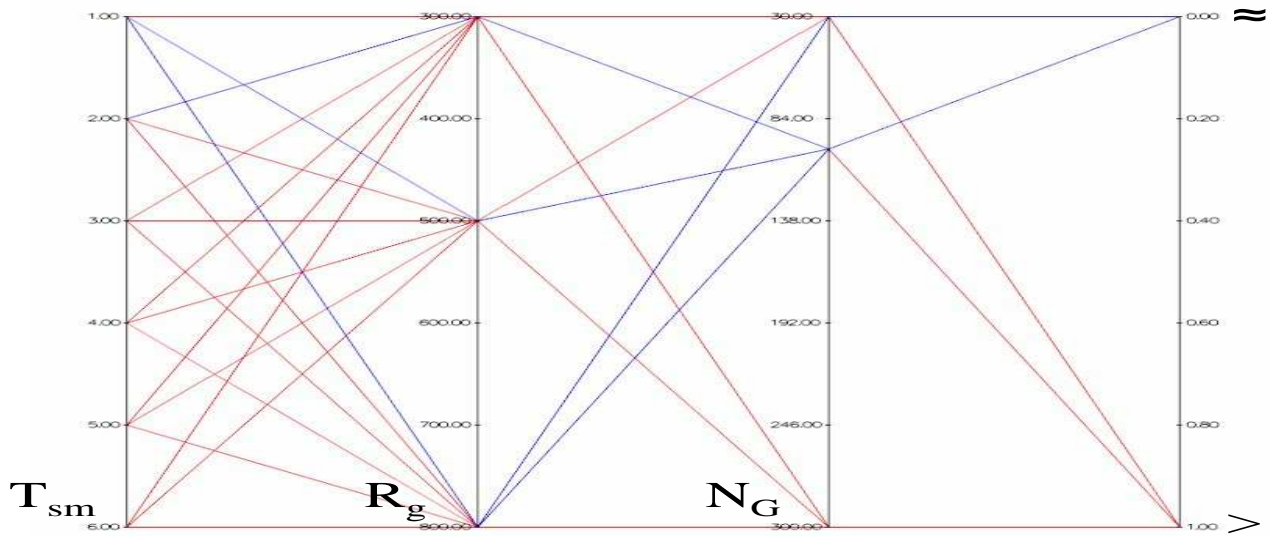


Figure H.31: Comparing the EEMMASMP against the NSGA-II-MPA algorithm with regard to the $\bar{\xi}$ metric using the Mann-Whitney U test

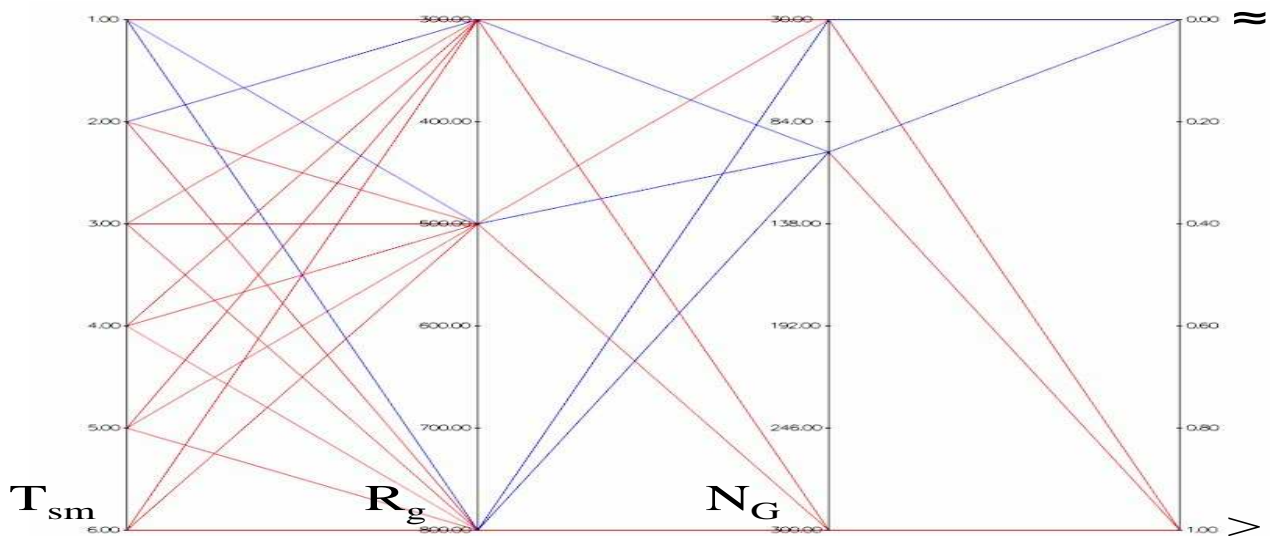


Figure H.32: Comparing the EEMMASMH against the NSGA-II-MPA algorithm with regard to the $\bar{\xi}$ metric using the Mann-Whitney U test

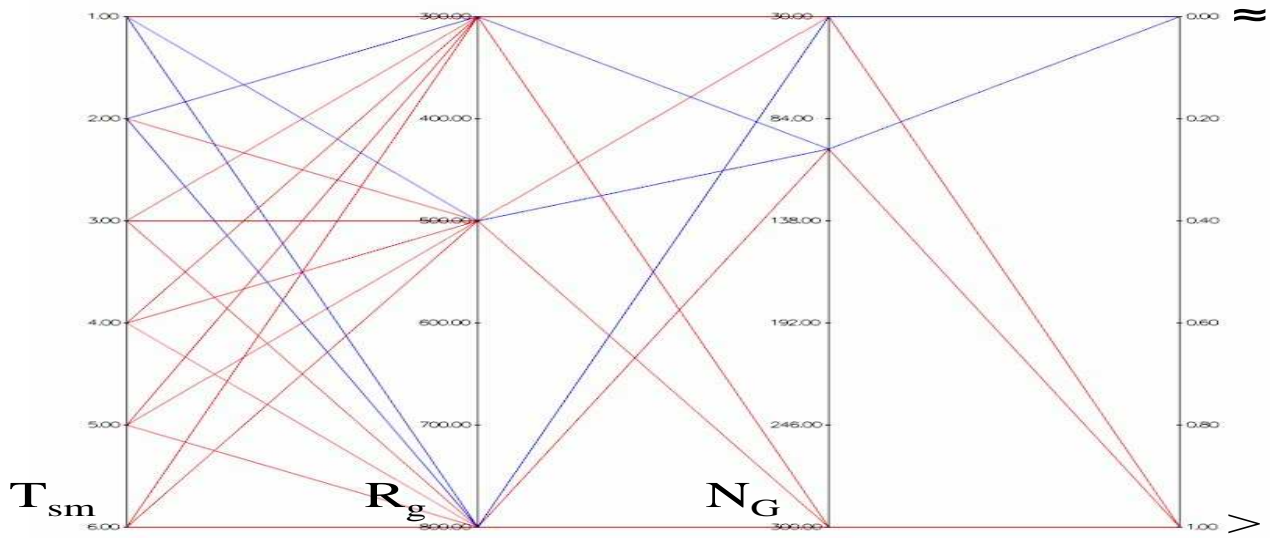


Figure H.33: Comparing the EEMACOMC against the NSGA-II-MPA algorithm with regard to the $\bar{\xi}$ metric using the Mann-Whitney U test

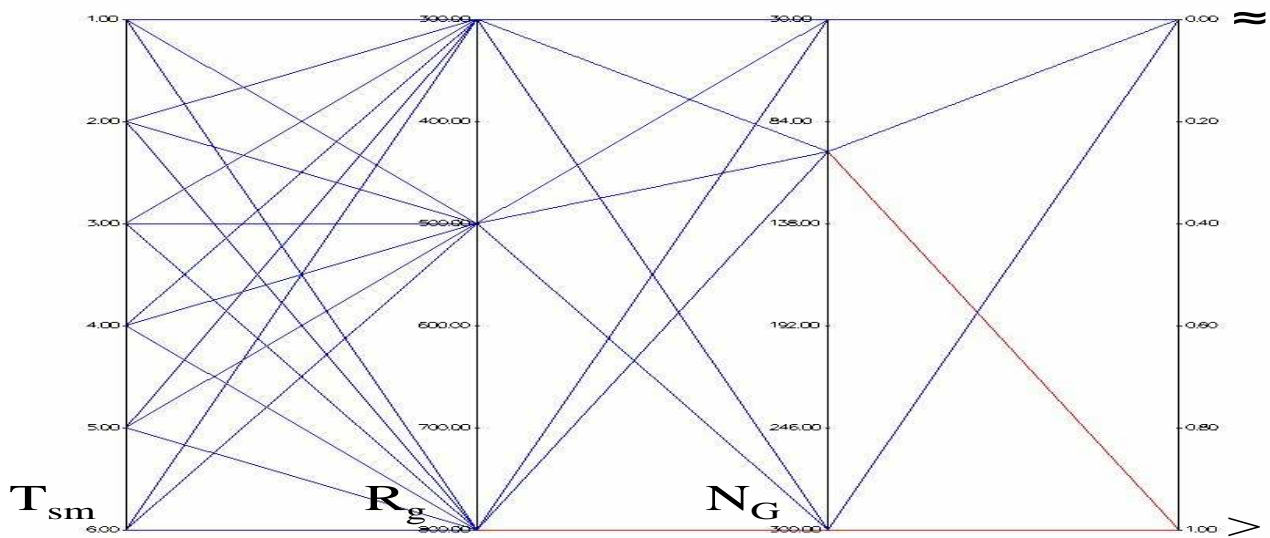


Figure H.34: Comparing the EEMMASMP against the EEMMASMH algorithm with regard to the $\bar{\xi}$ metric using the Mann-Whitney U test

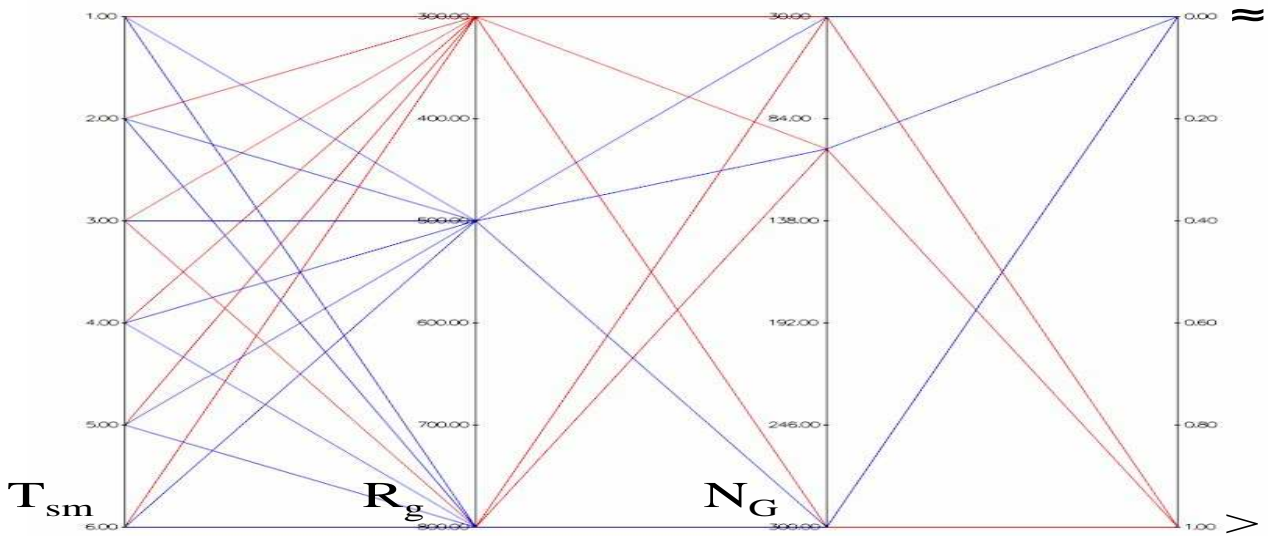


Figure H.35: Comparing the EEMACOMP against the EEMACOMC algorithm with regard to the $\bar{\xi}$ metric using the Mann-Whitney U test

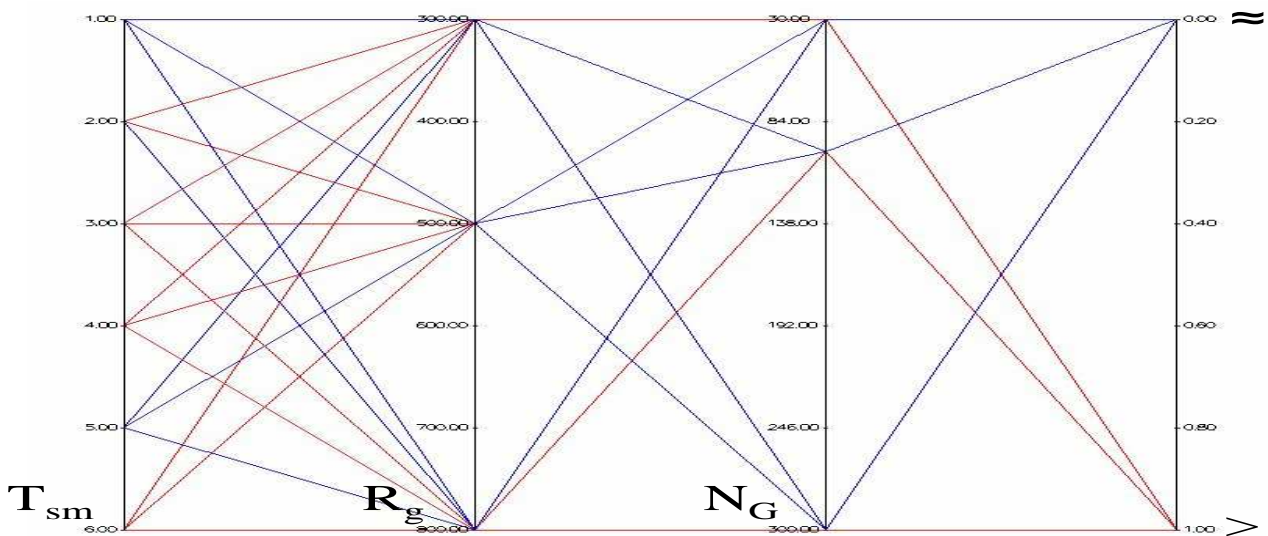


Figure H.36: Comparing the EEMACOMP against the EEMMASMP algorithm with regard to the $\bar{\xi}$ metric using the Mann-Whitney U test

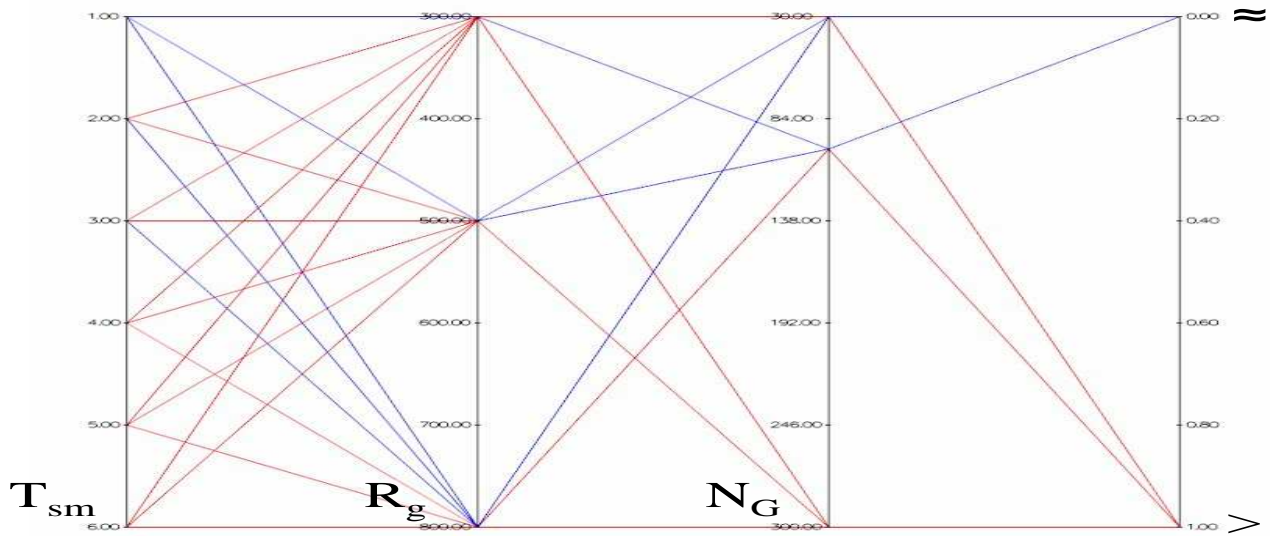


Figure H.37: Comparing the EEMACOMP against the EEMMASMH algorithm with regard to the $\bar{\xi}$ metric using the Mann-Whitney U test

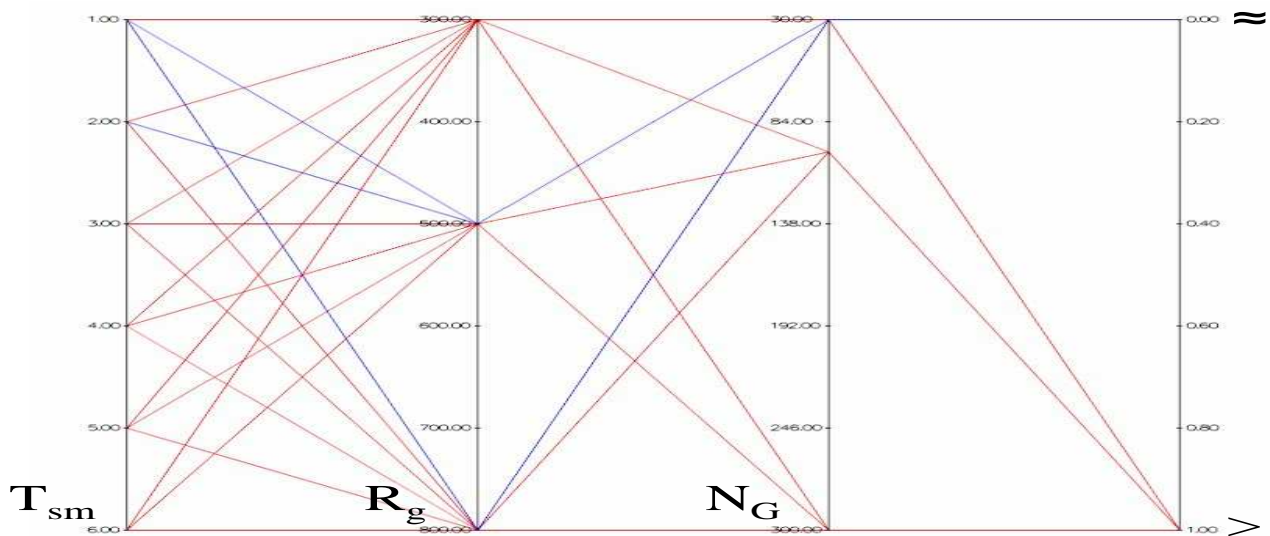


Figure H.38: Comparing the EEMMASMH against the EEMACOMH algorithm with regard to the $\bar{\xi}$ metric using the Mann-Whitney U test

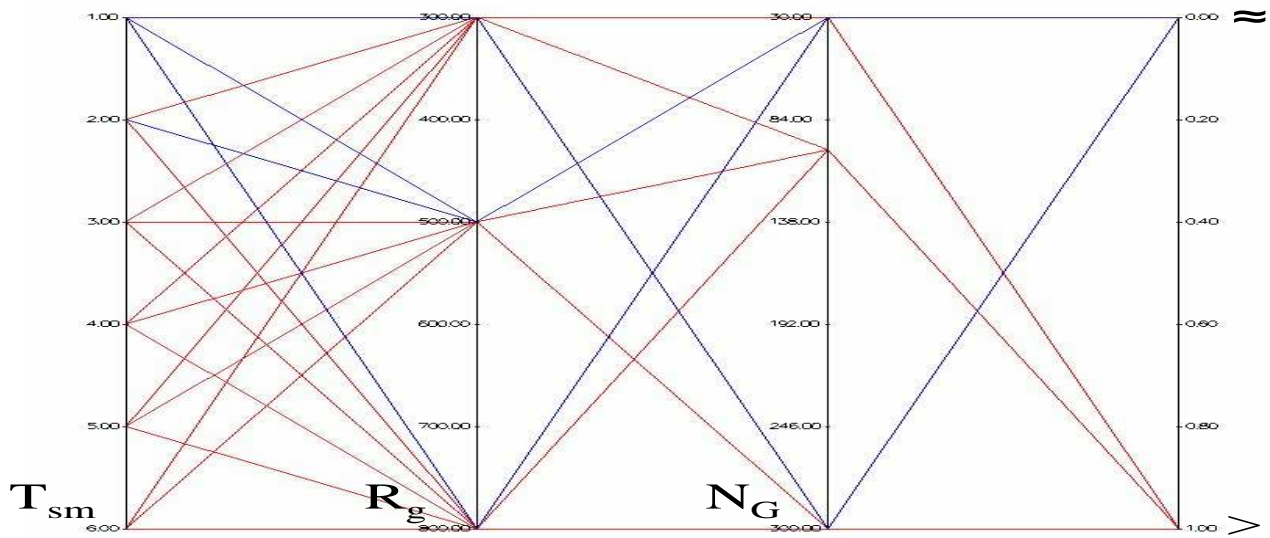


Figure H.39: Comparing the EEMMASMP against the EEMACOMH algorithm with regard to the $\bar{\xi}$ metric using the Mann-Whitney U test

Appendix I

Optimisation Criteria Results

This appendix summarises the values of each objective function for each algorithm EEMACOMP, EEMACOMH, EEMMASMP, EEMMASMH, EEMACOMC, and NSGA-II-MPA and for each scenario.

Table I.1: EP objective: $N_G = 30$, $R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	2.99±0.19	3.04±0.19	3.05±0.16	3.06±0.16	3.10±0.15	3.07±0.14
$P_{EEMACOMH}$	2.68±0.12	2.71±0.12	2.71±0.11	2.70±0.11	2.74±0.11	2.70±0.10
$P_{EEMMASMP}$	2.76±0.13	2.79±0.13	2.79±0.11	2.80±0.12	2.82±0.11	2.80±0.10
$P_{EEMMASMH}$	2.79±0.13	2.81±0.13	2.80±0.12	2.81±0.12	2.84±0.11	2.82±0.11
$P_{EEMACOMC}$	4.16±0.27	4.01±0.23	3.95±0.17	3.94±0.13	3.94±0.15	3.90±0.12
$P_{NSGA-II-MPA}$	1.84±0.12	1.78±0.09	1.73±0.07	1.72±0.07	1.72±0.06	1.71±0.06

Table I.2: EP objective: $N_G = 30$, $R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	4.11±0.42	4.00±0.27	4.03±0.24	3.71±0.25	4.10±0.25	3.90±0.20
$P_{EEMACOMH}$	3.71±0.34	3.58±0.22	3.58±0.21	3.24±0.17	3.60±0.21	3.46±0.15
$P_{EEMMASMP}$	3.64±0.33	3.57±0.19	3.56±0.18	3.36±0.19	3.59±0.18	3.59±0.17
$P_{EEMMASMH}$	3.66±0.33	3.59±0.22	3.58±0.19	3.39±0.19	3.60±0.18	3.63±0.19
$P_{EEMACOMC}$	5.76±0.46	5.50±0.34	5.49±0.36	5.48±0.36	5.38±0.33	5.30±0.36
$P_{NSGA-II-MPA}$	1.93±0.18	1.82±0.11	1.79±0.09	1.78±0.09	1.76±0.07	1.74±0.06

Table I.3: EP objective: $N_G = 30$, $R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	5.79±0.66	6.01±0.45	6.34±0.37	6.05±0.35	6.21±0.43	6.42±0.37
$P_{EEMACOMH}$	5.41±0.39	5.29±0.44	5.47±0.29	5.27±0.29	5.39±0.26	5.56±0.26
$P_{EEMMASMP}$	5.64±0.41	5.56±0.31	5.78±0.30	5.55±0.26	5.60±0.29	5.79±0.28
$P_{EEMMASMH}$	5.50±0.40	5.50±0.31	5.81±0.30	5.55±0.30	5.57±0.30	5.85±0.29
$P_{EEMACOMC}$	8.63±0.77	8.60±0.75	8.67±0.66	8.62±0.66	8.67±0.65	8.57±0.59
$P_{NSGA-II-MPA}$	2.95±0.32	2.91±0.24	2.82±0.18	2.80±0.14	2.79±0.13	2.79±0.13

Table I.4: EP objective: $N_G = 100, R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	4.57±0.33	4.55±0.24	4.47±0.21	4.52±0.18	4.50±0.17	4.50±0.14
$PEEMACOMH$	4.72±0.55	4.69±0.40	4.56±0.39	4.66±0.34	4.65±0.31	4.67±0.31
$PEEMMASMP$	4.37±0.32	4.44±0.23	4.41±0.19	4.47±0.16	4.47±0.16	4.47±0.15
$PEEMMASMH$	4.37±0.38	4.45±0.28	4.43±0.29	4.49±0.27	4.51±0.31	4.52±0.30
$PEEMACOMC$	4.25±0.42	4.31±0.24	4.32±0.20	4.38±0.17	4.40±0.18	4.39±0.15
$PNSGA-II-MPA$	2.15±0.20	2.13±0.16	2.11±0.16	2.11±0.15	2.11±0.17	2.14±0.15

Table I.5: EP objective: $N_G = 100, R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	3.78±0.38	3.85±0.36	3.68±0.31	3.75±0.31	3.78±0.31	3.76±0.29
$PEEMACOMH$	3.35±0.63	3.09±0.40	3.31±0.51	3.13±0.37	3.09±0.31	3.07±0.37
$PEEMMASMP$	3.40±0.30	3.48±0.26	3.28±0.28	3.46±0.28	3.49±0.26	3.45±0.27
$PEEMMASMH$	3.43±0.34	3.55±0.32	3.36±0.37	3.54±0.37	3.54±0.37	3.62±0.36
$PEEMACOMC$	3.57±0.52	3.59±0.38	3.39±0.29	3.46±0.31	3.50±0.30	3.49±0.26
$PNSGA-II-MPA$	2.05±0.14	2.03±0.11	2.01±0.09	2.00±0.08	2.00±0.08	1.99±0.09

Table I.6: EP objective: $N_G = 100, R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	3.45±0.34	3.64±0.33	3.65±0.29	3.71±0.30	3.99±0.29	4.04±0.27
$PEEMACOMH$	2.79±0.37	2.73±0.27	2.64±0.24	2.64±0.23	2.71±0.25	2.70±0.21
$PEEMMASMP$	3.16±0.29	3.21±0.29	3.21±0.27	3.27±0.29	3.43±0.25	3.43±0.27
$PEEMMASMH$	3.13±0.31	3.20±0.26	3.19±0.23	3.31±0.26	3.65±0.24	3.67±0.22
$PEEMACOMC$	5.12±0.53	5.48±0.52	5.53±0.46	5.59±0.53	5.89±0.51	6.00±0.46
$PNSGA-II-MPA$	2.53±0.19	2.47±0.13	2.38±0.08	2.38±0.09	2.39±0.09	2.36±0.08

Table I.7: EP objective: $N_G = 300, R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	19.25±2.44	19.27±2.01	19.19±1.98	18.64±1.93	18.95±1.84	18.92±1.62
$PEEMACOMH$	20.08±4.16	21.68±3.89	21.80±3.76	21.64±3.63	22.47±3.71	22.14±3.25
$PEEMMASMP$	19.59±2.51	19.64±1.98	19.53±1.96	19.25±1.71	19.36±1.60	19.14±1.33
$PEEMMASMH$	19.67±2.71	19.53±2.26	19.40±2.53	19.16±2.59	19.29±2.43	19.24±2.80
$PEEMACOMC$	15.20±2.13	14.96±1.64	14.83±1.57	14.78±1.41	14.92±1.20	14.77±1.12
$PNSGA-II-MPA$	2.85±0.21	2.85±0.19	2.95±0.16	2.91±0.14	2.91±0.16	2.90±0.14

Table I.8: EP objective: $N_G = 300, R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	14.58±2.69	15.59±2.54	15.08±2.24	14.91±2.28	14.93±2.33	14.50±1.98
$PEEMACOMH$	19.13±4.86	21.92±4.63	22.22±4.30	22.31±4.50	23.10±4.48	22.22±3.78
$PEEMMASMP$	15.90±2.92	17.53±2.81	17.32±2.30	16.96±2.16	17.34±2.33	16.38±1.85
$PEEMMASMH$	16.46±3.38	18.02±3.63	17.59±3.58	17.63±3.99	17.64±4.08	16.80±4.12
$PEEMACOMC$	13.25±2.56	14.44±2.52	14.16±2.17	13.78±2.07	13.97±2.21	13.12±1.99
$PNSGA-II-MPA$	2.71±0.22	2.81±0.16	2.83±0.12	2.80±0.12	2.81±0.12	2.85±0.12

Table I.9: EP objective: $N_G = 300, R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	18.86±3.83	18.96±3.61	17.75±2.87	17.49±2.98	17.26±2.84	15.45±2.22
$PEEMACOMH$	27.20±6.73	28.53±6.95	27.18±6.14	27.27±5.87	27.84±5.98	25.43±4.89
$PEEMMASMP$	21.33±4.43	21.43±4.20	19.87±3.71	20.24±3.73	19.95±3.47	17.63±2.56
$PEEMMASMH$	22.84±5.04	22.97±5.36	21.54±5.23	21.57±5.63	21.15±6.62	18.59±6.99
$PEEMACOMC$	18.56±4.37	19.23±4.10	17.55±3.28	17.40±3.65	17.40±2.98	15.51±2.55
$PNSGA-II-MPA$	4.16±0.28	4.19±0.24	4.12±0.26	4.13±0.20	4.17±0.23	4.18±0.21

Table I.10: TNP objective: $N_G = 30, R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
<i>PEEMACOMP</i>	0.0018±0.0002	0.0016±0.0001	0.0016±0.0001	0.0016±0.0001	0.0016±0.0001	0.0016±0.0000
<i>PEEMACOMH</i>	0.0018±0.0002	0.0016±0.0001	0.0016±0.0001	0.0016±0.0001	0.0016±0.0001	0.0016±0.0001
<i>PEEMMASMP</i>	0.0017±0.0002	0.0016±0.0001	0.0016±0.0001	0.0016±0.0001	0.0016±0.0001	0.0015±0.0001
<i>PEEMMASMH</i>	0.0017±0.0002	0.0016±0.0001	0.0016±0.0001	0.0016±0.0001	0.0015±0.0001	0.0015±0.0001
<i>PEEMACOMC</i>	0.0017±0.0001	0.0017±0.0001	0.0016±0.0001	0.0016±0.0000	0.0016±0.0000	0.0016±0.0000
<i>PNSGA-II-MPA</i>	0.0015±0.0002	0.0014±0.0001	0.0014±0.0001	0.0013±0.0001	0.0013±0.0001	0.0013±0.0000

Table I.11: TNP objective: $N_G = 30, R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
<i>PEEMACOMP</i>	0.0028±0.0005	0.0025±0.0002	0.0024±0.0002	0.0024±0.0002	0.0023±0.0001	0.0024±0.0001
<i>PEEMACOMH</i>	0.0029±0.0004	0.0026±0.0002	0.0026±0.0001	0.0025±0.0001	0.0025±0.0001	0.0024±0.0001
<i>PEEMMASMP</i>	0.0028±0.0004	0.0026±0.0002	0.0025±0.0001	0.0025±0.0001	0.0025±0.0001	0.0025±0.0001
<i>PEEMMASMH</i>	0.0028±0.0004	0.0026±0.0002	0.0025±0.0001	0.0025±0.0001	0.0025±0.0001	0.0025±0.0001
<i>PEEMACOMC</i>	0.0027±0.0002	0.0025±0.0001	0.0025±0.0001	0.0025±0.0001	0.0024±0.0001	0.0024±0.0001
<i>PNSGA-II-MPA</i>	0.0020±0.0005	0.0017±0.0002	0.0017±0.0002	0.0017±0.0001	0.0017±0.0001	0.0016±0.0001

Table I.12: TNP objective: $N_G = 30, R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
<i>PEEMACOMP</i>	0.0064±0.0016	0.0057±0.0009	0.0053±0.0006	0.0051±0.0006	0.0047±0.0005	0.0049±0.0006
<i>PEEMACOMH</i>	0.0067±0.0018	0.0060±0.0009	0.0054±0.0005	0.0053±0.0005	0.0049±0.0003	0.0050±0.0003
<i>PEEMMASMP</i>	0.0064±0.0017	0.0056±0.0009	0.0051±0.0006	0.0050±0.0005	0.0046±0.0004	0.0047±0.0004
<i>PEEMMASMH</i>	0.0063±0.0016	0.0055±0.0008	0.0051±0.0006	0.0050±0.0005	0.0046±0.0004	0.0047±0.0004
<i>PEEMACOMC</i>	0.0045±0.0005	0.0043±0.0003	0.0043±0.0003	0.0042±0.0003	0.0039±0.0002	0.0042±0.0003
<i>PNSGA-II-MPA</i>	0.0860±0.0840	0.0051±0.0017	0.0042±0.0008	0.0041±0.0006	0.0039±0.0005	0.0038±0.0004

Table I.13: TNP objective: $N_G = 100, R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
<i>PEEMACOMP</i>	0.0014±0.0001	0.0013±0.0001	0.0013±0.0000	0.0013±0.0000	0.0013±0.0000	0.0013±0.0000
<i>PEEMACOMH</i>	0.0016±0.0002	0.0014±0.0001	0.0014±0.0001	0.0014±0.0001	0.0013±0.0000	0.0013±0.0000
<i>PEEMMASMP</i>	0.0014±0.0001	0.0013±0.0001	0.0013±0.0000	0.0013±0.0000	0.0013±0.0000	0.0013±0.0000
<i>PEEMMASMH</i>	0.0014±0.0001	0.0013±0.0001	0.0013±0.0001	0.0013±0.0001	0.0013±0.0001	0.0013±0.0001
<i>PEEMACOMC</i>	0.0015±0.0002	0.0014±0.0001	0.0014±0.0001	0.0014±0.0001	0.0013±0.0000	0.0013±0.0000
<i>PNSGA-II-MPA</i>	0.0119±0.4545	0.0022±0.0008	0.0017±0.0003	0.0018±0.0004	0.0018±0.0004	0.0017±0.0003

Table I.14: TNP objective: $N_G = 100, R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
<i>PEEMACOMP</i>	0.0016±0.0002	0.0016±0.0002	0.0015±0.0001	0.0015±0.0001	0.0015±0.0001	0.0015±0.0001
<i>PEEMACOMH</i>	0.0018±0.0002	0.0016±0.0002	0.0016±0.0001	0.0016±0.0001	0.0015±0.0001	0.0015±0.0001
<i>PEEMMASMP</i>	0.0016±0.0002	0.0015±0.0001	0.0015±0.0001	0.0015±0.0001	0.0015±0.0001	0.0015±0.0001
<i>PEEMMASMH</i>	0.0016±0.0002	0.0015±0.0001	0.0015±0.0001	0.0015±0.0001	0.0015±0.0001	0.0015±0.0001
<i>PEEMACOMC</i>	0.0018±0.0002	0.0017±0.0002	0.0016±0.0001	0.0016±0.0001	0.0016±0.0001	0.0016±0.0001
<i>PNSGA-II-MPA</i>	0.0022±0.0077	0.0016±0.0003	0.0015±0.0002	0.0015±0.0001	0.0015±0.0001	0.0015±0.0001

Table I.15: TNP objective: $N_G = 100, R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
<i>PEEMACOMP</i>	0.0031±0.0004	0.0029±0.0003	0.0028±0.0002	0.0027±0.0002	0.0028±0.0002	0.0027±0.0002
<i>PEEMACOMH</i>	0.0033±0.0004	0.0030±0.0003	0.0028±0.0002	0.0028±0.0002	0.0027±0.0002	0.0027±0.0001
<i>PEEMMASMP</i>	0.0031±0.0003	0.0029±0.0002	0.0027±0.0002	0.0027±0.0001	0.0027±0.0001	0.0027±0.0001
<i>PEEMMASMH</i>	0.0031±0.0004	0.0029±0.0002	0.0027±0.0002	0.0027±0.0002	0.0027±0.0002	0.0027±0.0001
<i>PEEMACOMC</i>	0.0038±0.0003	0.0037±0.0002	0.0035±0.0001	0.0035±0.0001	0.0035±0.0002	0.0035±0.0001
<i>PNSGA-II-MPA</i>	0.0028±0.0004	0.0026±0.0002	0.0025±0.0001	0.0025±0.0001	0.0025±0.0001	0.0024±0.0001

Table I.16: TNP objective: $N_G = 300, R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	0.0012±0.0001	0.0012±0.0000	0.0011±0.0000	0.0011±0.0000	0.0011±0.0000	0.0011±0.0000
$PEEMACOMH$	0.0013±0.0001	0.0013±0.0001	0.0012±0.0000	0.0012±0.0000	0.0012±0.0000	0.0012±0.0000
$PEEMMASMP$	0.0012±0.0000	0.0012±0.0000	0.0011±0.0000	0.0011±0.0000	0.0011±0.0000	0.0011±0.0000
$PEEMMASMH$	0.0012±0.0001	0.0012±0.0000	0.0012±0.0000	0.0011±0.0001	0.0011±0.0001	0.0011±0.0001
$PEEMACOMC$	0.0013±0.0001	0.0012±0.0000	0.0012±0.0000	0.0012±0.0000	0.0012±0.0000	0.0012±0.0000
$PNSGA-II-MPA$	0.0018±0.0005	0.0016±0.0002	0.0015±0.0002	0.0014±0.0001	0.0014±0.0001	0.0014±0.0001

Table I.17: TNP objective: $N_G = 300, R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	0.0014±0.0001	0.0014±0.0001	0.0013±0.0001	0.0013±0.0001	0.0013±0.0001	0.0013±0.0000
$PEEMACOMH$	0.0016±0.0002	0.0016±0.0002	0.0016±0.0002	0.0015±0.0001	0.0016±0.0002	0.0015±0.0002
$PEEMMASMP$	0.0014±0.0001	0.0014±0.0001	0.0013±0.0000	0.0013±0.0000	0.0013±0.0000	0.0013±0.0000
$PEEMMASMH$	0.0014±0.0001	0.0014±0.0001	0.0014±0.0001	0.0014±0.0001	0.0014±0.0001	0.0013±0.0001
$PEEMACOMC$	0.0015±0.0001	0.0015±0.0001	0.0015±0.0001	0.0015±0.0001	0.0015±0.0001	0.0014±0.0001
$PNSGA-II-MPA$	0.0042±0.0027	0.0027±0.0008	0.0024±0.0004	0.0023±0.0003	0.0023±0.0003	0.0022±0.0003

Table I.18: TNP objective: $N_G = 300, R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	0.0020±0.0002	0.0019±0.0002	0.0018±0.0001	0.0018±0.0001	0.0018±0.0001	0.0017±0.0001
$PEEMACOMH$	0.0025±0.0003	0.0024±0.0003	0.0023±0.0003	0.0023±0.0002	0.0022±0.0002	0.0022±0.0002
$PEEMMASMP$	0.0020±0.0002	0.0020±0.0001	0.0019±0.0001	0.0019±0.0001	0.0018±0.0001	0.0018±0.0001
$PEEMMASMH$	0.0021±0.0002	0.0020±0.0002	0.0019±0.0001	0.0019±0.0002	0.0019±0.0002	0.0018±0.0002
$PEEMACOMC$	0.0024±0.0002	0.0023±0.0002	0.0022±0.0002	0.0021±0.0002	0.0021±0.0002	0.0020±0.0001
$PNSGA-II-MPA$	0.0049±0.0010	0.0044±0.0006	0.0043±0.0006	0.0042±0.0005	0.0043±0.0006	0.0042±0.0006

Table I.19: VNP objective: $N_G = 30, R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	108.10±6.46	110.91±5.39	112.53±4.46	112.24±3.57	112.09±3.88	113.13±2.93
$PEEMACOMH$	113.66±6.21	117.24±4.80	118.96±3.93	118.89±2.83	118.71±3.08	119.69±2.35
$PEEMMASMP$	112.59±6.16	115.70±4.89	117.40±4.11	117.09±3.18	117.02±3.40	117.87±2.53
$PEEMMASMH$	112.31±6.37	115.43±4.94	117.21±4.22	116.94±3.16	116.78±3.38	117.58±2.51
$PEEMACOMC$	90.67±6.65	95.73±5.54	98.05±4.36	98.36±3.21	98.94±3.33	99.75±2.68
$PNSGA-II-MPA$	134.02±10.59	141.11±6.91	145.06±5.40	145.95±4.32	146.53±4.33	147.30±3.75

Table I.20: VNP objective: $N_G = 30, R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	83.60±8.03	88.39±4.44	89.48±3.72	91.67±4.82	89.75±3.37	90.85±3.48
$PEEMACOMH$	83.81±8.65	90.16±4.77	91.87±3.82	94.43±4.67	92.75±3.52	94.07±3.23
$PEEMMASMP$	87.70±7.77	91.77±4.28	92.93±3.58	94.85±4.45	93.33±3.29	93.05±3.01
$PEEMMASMH$	87.33±8.05	91.82±4.24	93.06±3.47	94.69±4.34	93.28±3.13	92.69±3.36
$PEEMACOMC$	67.67±6.13	73.01±4.35	74.57±4.81	73.03±4.44	76.97±3.75	77.42±3.76
$PNSGA-II-MPA$	126.29±11.08	134.26±6.34	137.05±5.46	138.41±4.46	138.94±3.58	139.91±3.46

Table I.21: VNP objective: $N_G = 30, R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	79.72±15.02	74.19±13.71	74.02±12.39	72.01±12.55	72.55±12.62	69.33±11.01
$PEEMACOMH$	78.85±12.66	78.44±12.07	67.41±7.60	72.48±9.20	66.56±8.56	63.58±7.14
$PEEMMASMP$	79.17±13.93	73.49±13.24	73.30±10.97	71.07±11.67	70.74±11.58	69.49±10.33
$PEEMMASMH$	76.36±13.58	70.87±11.50	71.60±10.65	70.62±12.93	73.37±11.79	68.00±9.89
$PEEMACOMC$	54.91±9.10	53.07±6.33	57.80±7.85	55.47±6.77	56.42±7.35	58.03±7.69
$PNSGA-II-MPA$	113.15±22.97	106.48±14.44	105.87±9.37	109.76±11.97	105.53±7.64	107.30±8.22

Table I.22: VNP objective: $N_G = 100, R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	85.02±6.10	83.95±4.37	84.97±3.83	83.76±3.12	84.08±3.00	83.73±2.66
$PEEMACOMH$	91.30±7.59	87.06±5.61	85.78±5.45	84.39±4.99	83.74±4.58	82.78±4.65
$PEEMMASMP$	87.58±6.10	85.17±4.09	85.84±3.65	84.52±2.88	84.66±2.89	84.39±2.63
$PEEMMASMH$	88.09±5.78	85.54±4.09	85.96±3.68	84.76±3.12	84.78±3.23	84.47±2.87
$PEEMACOMC$	92.17±6.11	88.69±4.85	87.87±3.82	86.63±2.73	86.34±2.95	86.07±2.47
$PNSGA-II-MPA$	118.54±13.32	124.89±8.47	129.26±5.64	129.68±5.78	130.83±5.63	130.96±5.24

Table I.23: VNP objective: $N_G = 100, R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	103.59±5.40	104.14±3.86	104.73±4.08	103.72±3.87	103.49±3.27	103.37±3.07
$PEEMACOMH$	118.22±5.91	119.04±4.14	119.38±4.90	119.73±4.34	120.16±3.02	119.47±3.43
$PEEMMASMP$	107.90±4.61	108.33±3.36	110.67±3.48	108.72±3.47	108.56±2.91	108.36±2.77
$PEEMMASMH$	108.11±4.49	108.03±3.35	110.22±3.49	108.19±3.61	108.28±3.19	107.81±3.08
$PEEMACOMC$	105.14±5.41	104.41±3.79	106.48±3.32	105.93±4.00	105.58±3.15	105.47±3.04
$PNSGA-II-MPA$	120.06±11.35	127.65±7.50	130.26±5.68	131.94±4.03	132.33±3.97	133.21±4.40

Table I.24: VNP objective: $N_G = 100, R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	83.78±8.00	83.86±7.42	86.17±5.70	85.33±5.82	83.34±4.35	83.88±4.08
$PEEMACOMH$	99.07±12.52	102.94±11.51	107.01±9.25	107.31±9.25	104.19±8.06	104.64±7.24
$PEEMMASMP$	87.75±8.80	91.04±7.60	93.86±6.11	93.71±5.98	89.65±4.64	89.86±4.44
$PEEMMASMH$	89.66±8.79	91.59±9.01	93.88±7.35	92.89±8.12	87.98±8.40	88.18±8.58
$PEEMACOMC$	63.80±8.35	66.19±7.91	69.01±7.77	69.80±6.69	67.61±6.96	66.78±5.36
$PNSGA-II-MPA$	97.34±7.90	100.57±5.66	105.18±4.03	104.85±4.48	104.84±3.89	106.40±3.81

Table I.25: VNP objective: $N_G = 300, R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	36.37±5.36	34.53±4.65	33.36±3.95	34.48±4.50	33.47±4.32	33.42±4.26
$PEEMACOMH$	42.67±6.45	38.45±5.65	36.07±4.72	35.33±4.88	33.85±4.49	33.42±4.56
$PEEMMASMP$	35.75±4.97	33.03±3.50	31.99±3.01	32.29±2.99	31.74±2.82	31.75±2.48
$PEEMMASMH$	36.34±4.67	33.85±3.39	32.89±3.16	33.20±2.92	32.70±2.74	32.50±2.50
$PEEMACOMC$	45.39±5.07	42.62±3.95	41.48±3.46	41.27±3.48	40.16±2.99	40.12±3.09
$PNSGA-II-MPA$	119.89±16.36	116.80±9.58	114.37±8.87	113.77±6.63	113.71±6.16	113.65±5.58

Table I.26: VNP objective: $N_G = 300, R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	58.39±7.40	55.22±6.48	53.78±5.40	52.15±5.83	51.69±5.52	50.86±5.05
$PEEMACOMH$	69.95±9.15	64.73±8.64	61.26±7.30	58.97±7.01	57.71±7.11	55.71±6.25
$PEEMMASMP$	56.12±6.32	53.21±5.01	51.98±4.39	51.02±3.66	50.51±3.89	50.27±3.67
$PEEMMASMH$	57.07±6.12	55.20±5.71	53.43±4.23	52.36±4.16	52.31±4.59	52.09±3.73
$PEEMACOMC$	67.50±6.72	64.57±5.20	62.93±5.05	62.78±4.48	62.85±4.48	61.63±4.33
$PNSGA-II-MPA$	106.86±12.57	102.19±7.11	103.40±5.26	105.41±5.21	105.22±4.09	104.76±3.22

Table I.27: VNP objective: $N_G = 300, R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	95.20±7.57	90.53±8.03	85.94±6.58	85.22±7.00	83.13±6.38	80.44±6.45
$PEEMACOMH$	112.43±9.39	108.35±9.40	104.05±8.82	101.90±8.34	99.25±8.61	96.59±7.85
$PEEMMASMP$	92.01±6.48	90.39±6.14	86.76±5.59	86.35±5.52	84.35±5.21	82.33±4.60
$PEEMMASMH$	94.65±6.84	91.93±6.76	89.43±5.92	89.22±6.54	88.11±6.24	85.95±6.64
$PEEMACOMC$	99.21±6.94	97.30±6.57	94.25±6.92	93.16±5.77	93.49±6.15	89.33±5.10
$PNSGA-II-MPA$	95.84±12.89	102.66±12.83	104.40±12.81	109.51±12.47	107.60±12.36	111.38±12.81

Table I.28: CP objective: $N_G = 30, R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	0.013±0.001	0.013±0.001	0.014±0.001	0.014±0.001	0.014±0.001	0.014±0.001
$PEEMACOMH$	0.012±0.001	0.012±0.001	0.012±0.001	0.012±0.001	0.013±0.000	0.012±0.001
$PEEMMASMP$	0.012±0.001	0.013±0.001	0.013±0.001	0.013±0.001	0.013±0.001	0.013±0.000
$PEEMMASMH$	0.012±0.001	0.013±0.001	0.013±0.001	0.013±0.001	0.013±0.001	0.013±0.001
$PEEMACOMC$	0.017±0.001	0.017±0.001	0.017±0.000	0.017±0.001	0.017±0.001	0.017±0.000
$PNSGA-II-MPA$	0.009±0.001	0.009±0.000	0.009±0.000	0.009±0.000	0.009±0.000	0.009±0.000

Table I.29: CP objective: $N_G = 30, R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	0.012±0.001	0.012±0.001	0.012±0.001	0.011±0.001	0.012±0.001	0.012±0.001
$PEEMACOMH$	0.011±0.000	0.010±0.000	0.010±0.000	0.010±0.000	0.011±0.000	0.010±0.000
$PEEMMASMP$	0.011±0.000	0.010±0.000	0.010±0.000	0.010±0.000	0.011±0.000	0.011±0.000
$PEEMMASMH$	0.011±0.000	0.011±0.000	0.011±0.000	0.010±0.000	0.011±0.000	0.011±0.000
$PEEMACOMC$	0.017±0.001	0.016±0.001	0.016±0.001	0.016±0.001	0.016±0.001	0.015±0.001
$PNSGA-II-MPA$	0.009±0.001	0.008±0.001	0.008±0.001	0.008±0.001	0.008±0.001	0.008±0.001

Table I.30: CP objective: $N_G = 30, R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	0.011±0.001	0.010±0.000	0.011±0.001	0.011±0.000	0.011±0.001	0.011±0.001
$PEEMACOMH$	0.010±0.001	0.009±0.001	0.009±0.000	0.009±0.000	0.010±0.000	0.009±0.000
$PEEMMASMP$	0.011±0.001	0.010±0.000	0.010±0.000	0.010±0.000	0.010±0.000	0.010±0.000
$PEEMMASMH$	0.010±0.001	0.010±0.000	0.010±0.000	0.010±0.000	0.010±0.000	0.010±0.000
$PEEMACOMC$	0.019±0.002	0.018±0.001	0.017±0.001	0.017±0.001	0.018±0.001	0.017±0.001
$PNSGA-II-MPA$	0.066±3.068	0.008±0.001	0.008±0.001	0.008±0.000	0.008±0.000	0.008±0.000

Table I.31: CP objective: $N_G = 100, R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	0.025±0.002	0.025±0.001	0.025±0.001	0.025±0.001	0.025±0.001	0.025±0.001
$PEEMACOMH$	0.025±0.003	0.026±0.002	0.025±0.002	0.026±0.002	0.026±0.002	0.026±0.002
$PEEMMASMP$	0.024±0.002	0.025±0.001	0.025±0.001	0.025±0.001	0.025±0.001	0.025±0.001
$PEEMMASMH$	0.024±0.002	0.025±0.002	0.025±0.001	0.025±0.001	0.025±0.001	0.025±0.001
$PEEMACOMC$	0.022±0.002	0.023±0.002	0.023±0.001	0.023±0.001	0.024±0.001	0.024±0.001
$PNSGA-II-MPA$	0.016±0.341	0.010±0.002	0.011±0.002	0.010±0.002	0.010±0.002	0.011±0.002

Table I.32: CP objective: $N_G = 100, R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	0.019±0.002	0.019±0.002	0.019±0.002	0.019±0.002	0.019±0.001	0.019±0.001
$PEEMACOMH$	0.016±0.003	0.015±0.002	0.016±0.003	0.016±0.002	0.016±0.002	0.015±0.002
$PEEMMASMP$	0.017±0.002	0.017±0.001	0.017±0.001	0.018±0.001	0.018±0.001	0.018±0.001
$PEEMMASMH$	0.017±0.002	0.018±0.002	0.017±0.002	0.018±0.002	0.018±0.002	0.019±0.002
$PEEMACOMC$	0.016±0.002	0.017±0.002	0.016±0.001	0.016±0.001	0.017±0.001	0.016±0.001
$PNSGA-II-MPA$	0.010±0.006	0.010±0.001	0.010±0.001	0.010±0.001	0.010±0.001	0.010±0.001

Table I.33: CP objective: $N_G = 100, R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$PEEMACOMP$	0.010±0.001	0.010±0.001	0.010±0.000	0.010±0.000	0.011±0.001	0.011±0.000
$PEEMACOMH$	0.008±0.001	0.008±0.001	0.008±0.001	0.008±0.000	0.008±0.001	0.008±0.000
$PEEMMASMP$	0.009±0.001	0.009±0.001	0.009±0.001	0.010±0.001	0.010±0.001	0.010±0.001
$PEEMMASMH$	0.009±0.001	0.009±0.001	0.009±0.001	0.010±0.001	0.010±0.001	0.011±0.001
$PEEMACOMC$	0.012±0.002	0.013±0.002	0.013±0.002	0.013±0.002	0.014±0.002	0.014±0.002
$PNSGA-II-MPA$	0.008±0.000	0.008±0.000	0.008±0.000	0.008±0.000	0.008±0.000	0.008±0.000

Table I.34: CP objective: $N_G = 300, R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	0.117±0.015	0.117±0.012	0.117±0.012	0.113±0.012	0.115±0.011	0.115±0.010
$P_{EEMACOMH}$	0.121±0.025	0.131±0.024	0.132±0.023	0.131±0.022	0.136±0.023	0.134±0.020
$P_{EEMMASMP}$	0.120±0.015	0.120±0.012	0.119±0.012	0.117±0.010	0.118±0.010	0.117±0.008
$P_{EEMMASMH}$	0.120±0.017	0.119±0.014	0.118±0.015	0.117±0.016	0.118±0.015	0.117±0.017
$P_{EEMACOMC}$	0.091±0.013	0.090±0.010	0.089±0.010	0.089±0.009	0.090±0.007	0.089±0.007
$P_{NSGA-II-MPA}$	0.014±0.002	0.015±0.002	0.016±0.001	0.016±0.001	0.016±0.001	0.016±0.001

Table I.35: CP objective: $N_G = 300, R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	0.085±0.016	0.091±0.015	0.088±0.013	0.087±0.014	0.087±0.014	0.085±0.012
$P_{EEMACOMH}$	0.108±0.029	0.125±0.028	0.128±0.026	0.129±0.027	0.133±0.027	0.129±0.023
$P_{EEMMASMP}$	0.093±0.017	0.103±0.017	0.101±0.014	0.099±0.013	0.102±0.014	0.096±0.011
$P_{EEMMASMH}$	0.096±0.020	0.105±0.021	0.103±0.021	0.103±0.024	0.103±0.024	0.098±0.024
$P_{EEMACOMC}$	0.074±0.015	0.081±0.015	0.080±0.013	0.077±0.012	0.079±0.013	0.074±0.012
$P_{NSGA-II-MPA}$	0.012±0.002	0.012±0.001	0.012±0.001	0.012±0.001	0.012±0.001	0.013±0.001

Table I.36: CP objective: $N_G = 300, R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	0.098±0.021	0.099±0.020	0.094±0.016	0.093±0.017	0.092±0.016	0.083±0.013
$P_{EEMACOMH}$	0.137±0.036	0.145±0.038	0.140±0.034	0.142±0.033	0.146±0.034	0.134±0.028
$P_{EEMMASMP}$	0.111±0.024	0.112±0.023	0.104±0.021	0.106±0.021	0.105±0.019	0.093±0.014
$P_{EEMMASMH}$	0.119±0.027	0.120±0.029	0.113±0.028	0.113±0.031	0.111±0.036	0.098±0.037
$P_{EEMACOMC}$	0.088±0.022	0.092±0.021	0.084±0.017	0.083±0.019	0.083±0.016	0.075±0.014
$P_{NSGA-II-MPA}$	0.011±0.001	0.011±0.001	0.011±0.001	0.011±0.001	0.011±0.001	0.011±0.001

Table I.37: MNC objective: $N_G = 30, R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	2.604±0.889	1.835±0.460	1.600±0.335	1.467±0.263	1.395±0.223	1.323±0.179
$P_{EEMACOMH}$	2.494±0.814	1.747±0.419	1.587±0.319	1.421±0.244	1.368±0.211	1.292±0.164
$P_{EEMMASMP}$	2.701±0.947	1.919±0.493	1.616±0.329	1.531±0.294	1.453±0.257	1.353±0.208
$P_{EEMMASMH}$	2.701±0.937	1.921±0.495	1.605±0.349	1.499±0.286	1.410±0.228	1.358±0.205
$P_{EEMACOMC}$	3.633±1.558	2.466±0.802	1.964±0.557	1.675±0.365	1.460±0.280	1.497±0.277
$P_{NSGA-II-MPA}$	1.076±0.022	1.084±0.021	1.088±0.018	1.078±0.025	1.084±0.022	1.084±0.022

Table I.38: MNC objective: $N_G = 30, R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	3.141±1.179	2.089±0.584	1.759±0.407	1.553±0.306	1.547±0.295	1.417±0.222
$P_{EEMACOMH}$	2.913±1.063	1.920±0.505	1.711±0.395	1.489±0.277	1.415±0.233	1.365±0.202
$P_{EEMMASMP}$	2.975±1.119	2.058±0.562	1.752±0.406	1.570±0.312	1.500±0.268	1.410±0.234
$P_{EEMMASMH}$	2.957±1.091	2.046±0.550	1.689±0.385	1.555±0.311	1.497±0.265	1.445±0.248
$P_{EEMACOMC}$	4.914±2.267	3.122±1.154	2.389±0.813	1.862±0.457	1.660±0.392	1.674±0.362
$P_{NSGA-II-MPA}$	1.115±0.030	1.111±0.021	1.112±0.022	1.090±0.021	1.105±0.030	1.103±0.030

Table I.39: MNC objective: $N_G = 30, R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	3.988±1.619	2.613±0.812	2.118±0.571	1.877±0.445	1.706±0.330	1.663±0.341
$P_{EEMACOMH}$	3.919±1.473	2.492±0.787	2.346±0.698	1.983±0.516	1.792±0.422	1.829±0.435
$P_{EEMMASMP}$	4.168±1.687	2.813±0.887	2.301±0.662	2.075±0.531	1.855±0.429	1.791±0.431
$P_{EEMMASMH}$	4.217±1.740	2.858±0.925	2.207±0.667	2.023±0.508	1.816±0.389	1.824±0.425
$P_{EEMACOMC}$	7.024±3.452	4.441±1.855	3.201±1.244	2.596±0.816	2.137±0.631	2.059±0.562
$P_{NSGA-II-MPA}$	1.303±0.231	1.236±0.058	1.237±0.049	1.234±0.057	1.246±0.065	1.231±0.054

Table I.40: MNC objective: $N_G = 100, R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	1.953±0.497	1.528±0.255	1.378±0.183	1.309±0.145	1.257±0.120	1.229±0.108
$P_{EEMACOMH}$	2.070±0.528	1.614±0.275	1.457±0.197	1.388±0.165	1.329±0.143	1.284±0.119
$P_{EEMMASMP}$	2.229±0.605	1.731±0.356	1.530±0.261	1.451±0.215	1.371±0.182	1.310±0.147
$P_{EEMMASMH}$	2.211±0.589	1.737±0.369	1.528±0.260	1.431±0.203	1.367±0.176	1.341±0.151
$P_{EEMACOMC}$	2.139±0.569	1.714±0.349	1.517±0.254	1.391±0.188	1.356±0.174	1.287±0.138
$P_{NSGA-II-MPA}$	1.179±0.070	1.153±0.056	1.140±0.029	1.143±0.037	1.146±0.044	1.138±0.038

Table I.41: MNC objective: $N_G = 100, R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	2.409±0.773	1.841±0.443	1.591±0.300	1.479±0.245	1.417±0.218	1.363±0.184
$P_{EEMACOMH}$	2.319±0.670	1.829±0.414	1.632±0.320	1.477±0.231	1.430±0.218	1.350±0.176
$P_{EEMMASMP}$	2.720±0.904	2.037±0.560	1.703±0.373	1.580±0.320	1.524±0.298	1.424±0.236
$P_{EEMMASMH}$	2.682±0.866	2.042±0.564	1.724±0.381	1.584±0.306	1.510±0.282	1.452±0.231
$P_{EEMACOMC}$	2.488±0.799	1.924±0.529	1.631±0.314	1.485±0.243	1.435±0.234	1.372±0.188
$P_{NSGA-II-MPA}$	1.129±0.034	1.129±0.019	1.123±0.023	1.121±0.021	1.114±0.025	1.111±0.024

Table I.42: MNC objective: $N_G = 100, R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	3.645±1.382	2.520±0.784	2.095±0.571	1.849±0.419	1.701±0.369	1.618±0.337
$P_{EEMACOMH}$	3.031±1.100	2.056±0.568	1.826±0.414	1.626±0.328	1.536±0.290	1.497±0.270
$P_{EEMMASMP}$	3.612±1.457	2.508±0.836	1.984±0.521	1.804±0.425	1.739±0.401	1.595±0.340
$P_{EEMMASMH}$	3.359±1.292	2.406±0.762	1.980±0.570	1.758±0.420	1.746±0.393	1.749±0.394
$P_{EEMACOMC}$	5.147±2.514	3.393±1.388	2.608±0.951	2.026±0.606	2.013±0.576	1.914±0.509
$P_{NSGA-II-MPA}$	1.099±0.019	1.140±0.024	1.129±0.024	1.126±0.034	1.128±0.028	1.132±0.034

Table I.43: MNC objective: $N_G = 300, R_g = 300$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	2.514±0.739	1.824±0.382	1.613±0.274	1.466±0.212	1.393±0.180	1.334±0.156
$P_{EEMACOMH}$	2.669±0.771	1.948±0.409	1.727±0.301	1.607±0.256	1.525±0.224	1.469±0.214
$P_{EEMMASMP}$	3.026±1.006	2.215±0.601	1.794±0.378	1.656±0.309	1.557±0.266	1.459±0.224
$P_{EEMMASMH}$	2.992±0.971	2.185±0.606	1.821±0.409	1.622±0.286	1.566±0.268	1.490±0.223
$P_{EEMACOMC}$	2.580±0.823	1.899±0.429	1.638±0.318	1.466±0.208	1.390±0.179	1.372±0.175
$P_{NSGA-II-MPA}$	2.083±0.595	1.574±0.287	1.417±0.192	1.329±0.144	1.277±0.116	1.248±0.101

Table I.44: MNC objective: $N_G = 300, R_g = 500$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	2.318±0.604	1.791±0.343	1.576±0.250	1.473±0.203	1.396±0.168	1.327±0.137
$P_{EEMACOMH}$	2.504±0.667	1.959±0.400	1.728±0.294	1.618±0.242	1.554±0.223	1.463±0.187
$P_{EEMMASMP}$	2.860±0.878	2.184±0.574	1.773±0.363	1.616±0.280	1.546±0.261	1.430±0.196
$P_{EEMMASMH}$	2.859±0.861	2.171±0.580	1.810±0.390	1.629±0.285	1.562±0.257	1.439±0.191
$P_{EEMACOMC}$	2.482±0.731	1.890±0.427	1.646±0.308	1.484±0.210	1.389±0.170	1.352±0.160
$P_{NSGA-II-MPA}$	1.284±0.258	1.199±0.065	1.190±0.030	1.177±0.030	1.181±0.039	1.174±0.034

Table I.45: MNC objective: $N_G = 300, R_g = 800$

\mathcal{PF}	T_{sm}					
	1	2	3	4	5	6
$P_{EEMACOMP}$	2.894±0.824	2.163±0.492	1.814±0.330	1.645±0.254	1.554±0.211	1.416±0.167
$P_{EEMACOMH}$	3.225±1.001	2.425±0.599	1.992±0.419	1.810±0.312	1.716±0.282	1.558±0.217
$P_{EEMMASMP}$	3.526±1.134	2.510±0.669	2.014±0.444	1.819±0.339	1.680±0.287	1.499±0.209
$P_{EEMMASMH}$	3.628±1.189	2.614±0.721	2.087±0.465	1.882±0.373	1.737±0.300	1.546±0.216
$P_{EEMACOMC}$	3.216±1.008	2.341±0.593	1.921±0.405	1.775±0.322	1.646±0.266	1.478±0.193
$P_{NSGA-II-MPA}$	3.348±1.254	2.430±0.755	1.968±0.506	1.789±0.395	1.625±0.323	1.594±0.283