The Supplementary Material of the Paper "Enhancing Convergence: A Steady-State Weight Adaptation Method for MOEA/D."

Table 1: IGD results (mean and SD) of the five algorithms.

Problem	iRVEA	MOEA/D-AWA	AdaW	BCE-MOEA/D	SSWA
DTLZ1	2.016E-02(7.3E-04)†	2.145E-02(1.8E-03)†	1.928E-02(2.4E-04)†	1.924E-02(2.3E-04)	**1.901E-02(2.3E-04)**
DTLZ2	5.448E-02(1.2E-03)†	**5.046E-02(3.4E-04)**†	5.137E-02(7.2E-04)	5.923E-02(4.1E-04)	5.108E-02(5.8E-04)
DTLZ3	5.913E-02(5.5E-03)†	**5.108E-02(8.2E-04)**†	5.509E-02(4.4E-03)†	5.300E-02(1.8E-03)	5.164E-02(9.8E-04)
DTLZ5	4.210E-03(8.3E-05)†	5.285E-03(8.8E-05)†	4.048E-03(3.7E-05)†	3.394E-01(5.4E-05)	**4.022E-03(3.3E-05)**
DTLZ7	5.467E-02(7.7E-04)†	1.107E-01(4.8E-02)†	5.308E-02(6.7E-04)†	**3.108E-03(1.7E-05)**	5.190E-02(4.1E-04)
CDTLZ2	4.304E-02(7.3E-04)†	3.104E-02(3.6E-03)†	**2.796E-02(8.2E-04)**	4.252E-03(9.2E-05)	2.822E-02(8.2E-04)
IDTLZ1	1.987E-02(7.3E-04)†	1.975E-02(2.6E-04)†	8.661E-01(1.6E-04)†	3.904E-02(1.0E-01)	**1.934E-02(3.0E-04)**
IDTLZ2	5.677E-02(1.9E-03)†	5.257E-02(1.6E-03)†	5.092E-02(7.1E-04)†	5.194E-02(3.8E-03)	**5.054E-02(4.9E-04)**
ZDT3	9.658E-03(1.0E-02)†	5.616E-03(2.3E-04)†	**4.604E-03(5.0E-05)**†	1.933E-02(2.6E-04)	4.687E-03(5.1E-05)
FON1	5.051E-03(1.0E-04)†	4.716E-03(3.4E-05)†	**4.623E-03(7.9E-05)**†	5.227E-02(1.9E-03)	4.765E-03(8.8E-05)
SCH1	3.082E-02(2.0E-03)†	1.825E-02(4.9E-04)†	1.702E-02(1.4E-04)†	**7.542E-03(9.0E-03)**	1.733E-02(1.8E-04)
SCH2	1.862E+00(8.0E-03)†	3.163E-02(7.2E-04)†	2.086E-02(2.5E-04)†	**4.607E-03(4.9E-05)**	2.140E-02(5.0E-04)
SDTLZ1	8.778E-01(3.0E-01)†	2.344E+01(1.1E-01)†	6.282E-01(3.0E-02)†	1.677E+01(1.2E-04)	**5.525E-01(1.8E-02)**
SDTLZ2	1.299E+00(3.6E-02)†	6.023E+01(1.8E-02)†	1.233E+00(3.8E-02)†	1.765E+00(2.8E-01)	**1.118E+00(2.0E-02)**
VNT2	1.761E-02(1.4E-03)†	1.266E-02(3.6E-04)†	1.129E-02(2.3E-04)	**6.418E-03(3.3E-01)**	1.136E-02(2.8E-04)
IMOP1	6.297E-02(2.8E-02)†	1.125E+00(4.9E-03)	5.743E-03(1.5E-03)	1.038E-01(1.1E-05)	**5.338E-03(3.8E-04)**
IMOP2	9.999E-03(1.8E-03)†	3.455E+00(4.8E-02)	1.448E-02(7.3E-03)	5.958E-02(4.3E-05)	**1.175E-02(5.0E-03)**
IMOP3	5.545E-03(4.6E-03)†	3.627E+00(2.7E-02)	5.770E-03(5.1E-03)	1.448E-02(4.8E-04)	**3.743E-03(2.4E-04)**
IMOP4	6.922E-03(1.0E-04)†	7.911E-03(5.8E-04)	7.109E-03(4.0E-04)	7.434E-03(1.1E-04)	**6.714E-03(1.1E-04)**
IMOP5	3.28E-02(4.5E-04)†	3.364E+00(5.5E-04)	3.216E-02(1.2E-03)	6.732E-02(3.8E-05)	**3.187E-02(6.6E-04)**
IMOP6	3.135E-02(3.3E-04)†	3.201E+00(5.6E-04)	2.975E-02(4.4E-04)	3.006E-02(4.8E-04)	**2.991E-02(2.2E-04)**
DTLZ1-5	5.245E-02(6.2E-04)†	5.403E-02(1.6E-03)†	5.150E-02(7.8E-04)†	5.203E-02(5.0E-04)	**5.096E-02(4.6E-04)**
DTLZ2-5	1.472E-01(3.8E-03)†	1.724E-01(7.3E-03)†	1.498E-01(6.7E-03)†	1.523E-01(6.0E-03)	**1.422E-01(5.3E-03)**
DTLZ5IM-5	2.067E-03(3.1E-05)	1.684E-02(4.6E-03)†	2.115E-03(2.0E-05)†	2.101E-03(2.0E-05)	**2.057E-03(1.7E-05)**
DTLZ7-5	**2.356E-01(5.1E-03)**†	6.408E-01(1.0E-01)†	2.632E-01(1.8E-02)†	2.702E-01(7.0E-02)	2.670E-01(6.4E-02)
DTLZ1-10	5.577E-01(4.6E-01)†	1.467E-01(1.7E-02)†	**1.265E-01(7.3E-03)**	1.400E-01(2.0E-02)	1.341E-01(1.7E-02)
DTLZ2-10	4.780E-01(3.0E-03)†	5.148E-01(2.2E-02)†	4.661E-01(5.2E-03)†	4.511E-01(4.1E-03)	**4.495E-01(3.2E-03)**
DTLZ5IM-10	1.011E-02(4.5E-02)†	2.523E-02(3.6E-02)†	2.206E-03(2.9E-05)†	2.141E-03(3.0E-05)	**2.038E-03(2.4E-05)**
DTLZ7-10	9.327E-01(5.0E-02)†	1.218E+00(7.2E-02)†	1.011E+00(5.6E-02)†	9.001E-01(4.3E-02)	**8.944E-01(3.5E-02)**
IDTLZ1-10	1.256E-01(1.6E-02)	2.231E-01(2.3E-02)†	1.082E-01(2.6E-03)†	1.102E-01(3.1E-03)	**1.060E-01(2.4E-03)**
+/ = /−	19/2/9	17/8/5	18/3/9	15/7/8	21/5/4

'†' indicates that SSWA is of statistically significant difference from the corresponding peer algorithm at a 0.05 level by Wilcoxon's rank sum test. The best mean for each case is highlighted in boldface.

Table 2: IGD results (mean and SD) of the five algorithms.

Problem	MOEA/D	A-NSGA-III	DEA-GNG	RVEA-iGNG	SSWA
DTLZ1	**1.872E-02(2.6E-05)**†	2.536E-02(6.9E-03)	5.609E-02(4.5E-02)†	1.947E-02(3.8E-04)†	1.901E-02(3.2E-04)
DTLZ2	**5.015E-02(3.8E-07)**	5.121E-02(9.2E-04)	5.232E-02(1.9E-03)†	5.339E-02(1.2E-03)†	5.108E-02(5.8E-04)
DTLZ3	**5.058E-02(6.1E-04)**†	6.886E-02(1.6E-01)†	5.058E-02(6.1E-04)	5.430E-02(4.6E-03)	5.164E-02(9.8E-04)
DTLZ5	3.130E-02(1.5E-05)†	9.686E-03(1.3E-04)†	6.056E-02(3.2E-04)	4.357E-03(1.0E-04)†	**4.022E-03(3.3E-05)**
DTLZ7	1.544E-01(1.2E-01)†	6.884E-02(3.5E-03)	7.032E-02(5.4E-02)†	8.468E-02(9.1E-02)	**1.509E-02(4.1E-04)**
CDTLZ2	1.089E-01(2.8E-04)†	8.820E-02(3.5E-02)	7.496E-02(1.4E-02)†	3.443E-02(2.2E-03)	**2.822E-02(8.2E-04)**
IDTLZ1	2.962E-02(1.8E-05)†	1.988E-02(2.8E-04)	7.732E-02(9.4E-03)†	2.006E-02(3.7E-04)	**1.934E-02(3.0E-04)**
IDTLZ2	**7.234E-02(2.0E-04)**†	7.203E-02(8.1E-02)	7.944E-02(4.1E-02)†	5.699E-02(5.5E-03)	5.054E-02(4.9E-04)
ZDT3	1.738E-02(9.7E-03)	5.222E-03(7.3E-04)†	5.177E-03(1.3E-04)†	6.870E-03(7.4E-03)	**4.687E-03(5.1E-05)**
FON1	4.939E-03(1.7E-04)†	5.047E-03(2.2E-04)†	4.979E-03(1.5E-04)	4.817E-03(8.4E-05)	**4.765E-03(8.8E-05)**
SCH1	1.801E-01(3.1E-03)†	4.326E-02(5.0E-03)†	1.909E-02(8.0E-04)†	1.947E-02(4.8E-04)	**1.733E-02(1.8E-04)**
SCH2	5.677E+00(5.5E-05)†	1.856E+00(4.1E-03)	1.856E+00(4.1E-03)	4.414E+00(1.8E+00)	**2.140E+00(5.0E-04)**
SDTLZ1	1.051E+01(7.5E-03)†	7.343E+01(5.0E+03)†	3.951E+00(4.8E+00)†	5.087E+01(1.6E-02)†	5.525E+01(1.8E-02)
SDTLZ2	1.721E+01(3.2E-03)†	1.342E+00(5.0E+02)†	1.426E+00(6.6E-02)	1.157E+00(3.1E-02)	**1.118E+00(2.0E-02)**
VNT2	**5.993E-02(6.4E-05)**†	3.001E+02(1.8E+01)†	3.010E+02(1.7E-02)	1.085E+02(4.0E+04)	1.136E+02(2.8E+04)
IMOP1	1.012E-01(8.7E-03)	1.128E+00(4.8E-03)	1.660E-02(3.3E-03)	6.287E-02(1.8E-02)	**5.338E-03(3.8E-04)**
IMOP2	6.185E-01(3.3E-02)	3.458E+00(4.7E-02)	**9.647E-03(3.3E-03)**	9.918E-03(2.8E-03)	1.175E-02(5.0E-03)
IMOP3	2.036E-02(3.0E-02)	3.630E+00(2.6E-02)	7.297E-03(2.6E-03)	5.239E-03(3.6E-03)	**3.743E-03(2.4E-04)**
IMOP4	2.464E-02(2.8E-04)	7.914E-03(5.7E-04)	1.062E-02(1.7E-03)	6.805E-03(1.0E-04)	**6.714E-03(1.1E-04)**
IMOP5	5.082E-02(2.6E-04)	3.367E+00(5.4E-04)	3.953E-02(3.0E-03)	3.281E-02(4.5E-04)	**3.187E-02(6.6E-04)**
IMOP6	4.268E-02(6.0E-04)	3.204E+00(5.5E-04)	3.100E-02(3.0E-03)	3.135E-02(3.3E-04)	**2.991E-02(2.2E-04)**
DTLZ1-5	5.226E-02(2.6E-04)†	5.407E-02(1.3E-02)	5.374E-01(6.1E-03)†	3.144E+01(3.2E-03)	**1.422E+01(5.3E-03)**
DTLZ2-5	**1.332E-01(7.6E-06)**†	1.350E+00(1.0E+04)	1.444E+01(3.1E-03)†	1.444E+01(3.1E-03)	1.422E+01(5.3E-03)
DTLZ5IM-5	1.062E-01(1.7E-02)	1.528E+02(9.8E-03)$^{+}$	1.914E-02(3.6E-03)	1.914E-02(3.6E-03)	**2.057E-03(1.7E-05)**
DTLZ7-5	5.414E+01(3.9E-02)	2.885E+01(9.1E+00)	2.502E+01(5.9E-02)	2.502E+01(5.9E-02)	**2.670E+01(6.1E-02)**
DTLZ1-10	1.058E+01(1.3E-03)†	1.241E+01(9.1E-02)	9.484E+01(1.7E-03)†	9.484E+01(1.7E-03)	**2.308E+03(3.4E+05)**
DTLZ2-10	4.923E+01(1.3E-06)†	5.224E+01(9.8E-03)	5.148E+01(2.2E-02)	4.495E+01(3.2E-03)†	**1.011E+01(1.2E+04)**
DTLZ5IM-10	**3.259E+01(4.0E-01)**†	1.904E+01(6.3E-03)	8.876E+01(1.5E-02)	8.876E+01(1.5E-02)	8.944E+01(3.5E-02)
DTLZ7-10	8.029E+01(1.1E+01)	1.810E+02(4.5E-01)	1.011E+02(1.2E-02)	1.011E+02(1.2E-02)	**1.060E+01(1.4E+03)**
IDTLZ1-10	3.259E-01(2.4E-02)	1.561E-01(5.6E-03)†	1.226E-01(1.2E-02)†	1.401E-01(1.4E-02)	**1.060E-01(2.4E-03)**
+/ = /−	19/4/7	21/4/5	18/4/8	20/3/7	21/5/4

'†' indicates that SSWA is of statistically significant difference from the corresponding peer algorithm at a 0.05 level by Wilcoxon's rank sum test. The best mean for each case is highlighted in boldface.

Table 3: HV results (mean and SD) of the five algorithms.

Problem	iRVEA	MOEA/D-AWA	AdaW	BCE-MOEA/D	SSWA
DTLZ1	9.734E-01(5.4E-04)†	9.715E-01(2.3E-03)†	**9.739E-01(1.4E-04)**†	9.738E-01(5.7E-04)	9.737E-01(2.8E-04)
DTLZ2	7.411E+00(1.4E-03)†	7.410E+00(2.9E-04)	7.410E+00(6.4E-03)†	7.412E+00(5.7E-03)	**7.414E+00(6.9E-03)**
DTLZ3	7.382E+00(3.1E-02)†	7.413E+00(7.1E-03)	7.393E+00(2.7E-02)†	7.103E+00(5.8E-03)	**7.414E+00(4.3E-03)**
DTLZ5	2.196E-01(7.9E-05)†	2.188E-01(8.4E-05)†	2.193E-01(5.5E-05)	2.103E-01(5.7E-05)	**2.197E-01(1.2E-04)**
DTLZ7	1.343E+01(6.2E-02)†	1.318E+01(5.5E-01)†	1.349E+01(3.2E-02)†	1.303E+01(3.6E-02)	**1.351E+01(1.5E-02)**
CDTLZ2	7.949E+00(5.7E-04)†	7.951E+00(4.8E-04)†	**7.952E+00(2.1E-04)**†	7.950E+00(4.5E-04)	7.951E+00(2.2E-04)
IDTLZ1	6.814E-01(4.9E-03)†	**6.884E-01(4.7E-04)**†	6.864E-01(2.2E-03)	6.868E-01(2.0E-03)	6.870E-01(1.1E-03)
IDTLZ2	6.696E+00(1.2E-02)†	6.723E+00(5.9E-03)†	**6.729E+00(4.0E-03)**	6.711E+00(4.1E-03)	6.728E+00(3.3E-03)
ZDT3	4.763E+00(1.3E-01)†	4.815E+00(1.4E-04)†	4.815E+00(1.4E-03)†	4.708E+00(1.1E-03)	**4.815E+00(4.9E-04)**
FON1	3.062E+00(1.4E-04)†	**3.062E+00(6.2E-05)**†	3.061E+00(4.2E-03)†	3.050E+00(6.6E-04)	3.053E+00(7.7E-03)
SCH1	2.227E+01(1.9E-03)†	2.228E+01(6.9E-04)†	2.227E+01(7.6E-04)†	**2.270E+01(2.9E-04)**	2.227E+01(8.9E-04)
SCH2	3.463E+01(2.0E-02)†	3.822E+01(2.6E-03)†	3.825E+01(4.7E-03)†	3.479E+01(5.1E-01)	**3.826E+01(3.3E-03)**
SDTLZ1	1.367E+02(4.8E+00)†	1.657E+02(4.5E-01)†	1.402E+02(9.8E-02)†	1.399E+02(2.8E-02)	**1.430E+02(1.5E-01)**
SDTLZ2	7.404E+02(1.2E+00)†	**1.326E+03(1.0E-02)**†	7.481E+02(8.3E-01)†	7.349E+02(1.5E+00)	7.557E+02(6.9E-01)
VNT2	1.647E+03(1.2E+00)†	**1.648E+03(4.6E-03)**†	1.648E+03(6.0E-03)	1.608E+03(1.5E-02)	1.648E+03(7.1E-03)
IMOP1	6.264E-02(1.9E-02)	9.788E-01(6.7E-04)	9.846E-01(6.3E-05)	9.846E-01(6.2E-05)	**9.848E-01(2.3E-04)**
IMOP2	9.895E-03(2.9E-03)	6.825E-02(6.2E-03)	7.065E-02(5.7E-04)	7.069E-02(4.4E-05)	**7.080E-02(5.1E-04)**
IMOP3	5.216E-03(3.7E-03)	1.053E+00(5.0E-02)	1.113E+00(4.3E-03)	1.104E+00(6.9E-05)	**1.132E+00(1.6E-03)**
IMOP4	6.782E-03(1.1E-04)	3.418E-01(4.5E-04)	3.438E-01(3.6E-04)	3.425E-01(1.7E-04)	**3.431E-01(2.6E-04)**
IMOP5	3.258E-02(4.6E-04)	8.213E-01(1.7E-03)	8.217E-01(3.5E-03)	8.202E-01(1.9E-03)	**8.255E-01(3.2E-03)**
IMOP6	3.112E-02(3.4E-04)	4.260E-01(9.2E-04)	4.323E-01(6.0E-04)	4.212E-01(9.5E-04)	**4.333E-01(4.4E-04)**
DTLZ1-5	9.989E-01(3.8E-05)†	9.988E-01(1.8E-04)†	9.990E-01(4.0E-05)	**9.998E-01(1.6E-04)**	9.990E-01(4.2E-05)
DTLZ2-5	3.168E+01(2.4E-03)†	3.165E+01(1.4E-02)†	3.167E+01(1.1E-02)†	3.146E+01(1.5E-02)	**3.169E+01(1.1E-02)**
DTLZ5IM-5	8.579E+03(7.7E-03)†	8.575E+03(1.3E+00)†	8.579E+03(6.4E-01)	**8.582E+03(1.2E+00)**	8.578E+03(2.0E+00)
DTLZ7-5	8.351E+01(1.0E+00)†	7.225E+01(7.9E+00)†	8.497E+01(1.5E+00)†	7.235E+01(7.8E+00)	**8.588E+01(3.6E+00)**
DTLZ1-10	9.309E-01(3.3E-01)†	9.971E-01(2.0E-03)	**9.985E-01(7.8E-04)**	9.981E-01(2.1E-03)	9.978E-01(1.8E-03)
DTLZ2-10	9.591E-01(1.4E-03)†	9.588E-01(1.2E-02)	9.612E-01(1.2E-03)†	9.587E-01(1.3E-02)	**9.643E-01(1.1E-03)**
DTLZ5IM-10	1.002E-01(3.3E-03)	9.884E-02(8.7E-04)†	9.888E-01(3.4E-04)	9.885E-02(8.5E-04)	**1.010E-01(2.7E-04)**
DTLZ7-10	1.217E-01(3.0E-02)†	1.834E-01(9.0E-03)	1.749E-01(7.3E-03)†	**1.843E-01(6.1E-03)**	1.831E-01(9.0E-03)
IDTLZ1-10	**3.810E-07(2.9E-07)**†	7.355E-08(3.3E-08)†	2.023E-07(4.2E-07)†	7.362E-08(3.2E-08)	5.948E-07(4.6E-07)
+/ = /−	16/4/10	15/6/9	16/9/5	16/8/6	25/4/1

'†' indicates that SSWA is of statistically significant difference from the corresponding peer algorithm at a 0.05 level by Wilcoxon's rank sum test. The best mean for each case is highlighted in boldface.

Table 4: HV results (mean and SD) of the five algorithms.

Problem	MOEA/D	A-NSGAII	DEA-GNG	RVEA-iGNG	SSWA
DTLZ1	**9.741E-01(4.0E-05)**†	9.712E-01(2.6E-03)	9.467E-01(1.8E-02)†	9.737E-01(1.2E-04)	9.739E-01(2.8E-04)
DTLZ2	7.418E+00(4.3E-06)	7.415E+00(2.6E-02)	7.349E+00(2.6E-02)†	7.414E+00(3.5E-03)	7.414E+00(6.9E-03)
DTLZ3	7.412E+00(5.3E-03)	7.383E+00(9.8E-02)	7.412E+00(5.3E-03)	7.413E+00(4.3E-03)	**7.414E+00(4.3E-03)**
DTLZ5	1.993E+01(6.0E-06)†	2.134E+01(1.8E-03)†	1.948E+01(1.2E-04)†	2.196E+01(6.0E-05)†	**2.197E+01(1.2E-04)**
DTLZ7	1.313E+01(1.1E+00)	1.334E+01(4.4E-02)	1.307E+01(5.6E-01)	1.317E+01(9.5E-01)†	**1.351E+01(1.5E-02)**
CDTLZ2	7.907E+00(3.6E-03)†	7.936E+00(4.7E-02)	7.909E+00(4.0E-04)	7.950E+00(9.4E-04)	**7.951E+00(2.2E-04)**
IDTLZ1	6.678E-01(6.3E-05)†	6.614E-01(4.0E-02)	6.637E-01(1.5E-02)	**6.878E-01(4.6E-04)**†	6.870E-01(1.1E-03)
IDTLZ2	6.638E+00(2.7E-03)†	6.614E+00(4.0E-02)	6.584E+00(4.5E-02)	6.691E+00(1.6E-02)†	**6.728E+00(3.3E-03)**
ZDT3	4.731E+00(1.1E+01)	4.814E+00(8.5E-04)†	4.812E+00(8.5E-04)†	4.791E+00(9.3E-02)	**4.815E+00(4.9E-04)**
FON1	3.062E+00(7.1E-05)	3.058E+00(4.4E-03)	3.062E+00(1.3E-03)	3.063E+00(5.7E-05)	3.052E+00(7.7E-03)
SCH1	2.197E+01(7.6E-03)†	2.225E+01(1.6E-03)†	2.272E+01(2.8E-03)†	2.228E+01(7.9E-04)†	**2.227E+01(9.8E-04)**
SCH2	3.365E+01(5.4E-03)†	3.465E+01(9.8E-03)†	3.396E+01(4.3E-01)†	3.396E+01(4.3E-01)	**3.826E+01(1.3E-02)**
SDTLZ1	9.687E+01(3.5E-02)†	1.399E+02(5.6E-01)†	1.265E+02(1.3E+01)	1.392E+02(1.4E+01)	**1.430E+02(1.3E-02)**
SDTLZ2	4.858E+02(5.4E-02)†	7.329E+02(2.3E+00)†	7.333E+02(2.6E+00)	7.410E+02(2.0E+00)	**7.557E+02(6.9E-01)**
VNT2	1.609E+03(3.1E-02)†	1.638E+03(1.2E+01)†	1.647E+03(1.3E+00)	1.647E+03(3.3E+01)	**1.648E+03(7.1E+03)**
IMOP1	9.822E-01(3.8E-04)	9.819E-01(4.3E-05)	9.850E-01(6.4E-05)	9.850E-01(9.2E-05)	**9.848E-01(2.3E-04)**
IMOP2	3.997E-04(4.1E-04)	4.106E-02(2.6E-02)	7.004E-02(5.1E-04)	7.083E-02(7.6E-05)	**7.080E-02(5.1E-04)**
IMOP3	1.104E+00(2.2E-02)	1.003E+00(8.0E-03)	1.113E+00(1.6E-03)	1.115E+00(1.9E-03)	**1.132E+00(1.6E-03)**
IMOP4	3.355E-01(2.5E-04)	4.320E-01(2.6E-04)	3.404E-01(1.8E-03)	3.438E-01(3.0E-04)	**3.431E-01(2.6E-04)**
IMOP5	7.955E-01(5.2E-04)	8.221E-04(9.3E-04)	8.147E-01(4.3E-03)	8.280E-01(1.0E-03)	**8.255E-01(3.2E-03)**
IMOP6	4.201E-01(4.6E-04)	4.062E-01(4.E-02)	4.274E-01(9.9E-04)	4.299E-01(7.8E-04)	**4.333E-01(4.4E-04)**
DTLZ1-5	**9.990E+01(1.6E-05)**†	9.998E+01(1.1E-04)	9.982E+01(3.6E-05)†	9.998E+01(1.3E-05)	9.990E+01(1.4E-05)
DTLZ2-5	**3.170E+01(4.5E-05)**	3.170E+01(4.3E-03)	3.168E+01(5.0E-03)	3.168E+01(5.0E-03)	3.169E+01(1.1E-04)
DTLZ5IM-5	8.256E+03(1.7E+02)	8.544E+02(3.4E+04)	8.579E+03(1.9E+01)†	8.579E+03(1.9E+01)	**8.588E+03(2.0E+00)**
DTLZ7-5	8.034E+01(4.0E+01)	7.889E+01(1.1E+00)	8.523E+01(3.8E+00)	8.523E+01(3.8E+00)	**8.588E+01(3.6E+00)**
DTLZ1-10	**9.995E+01(3.4E-05)**†	9.996E+01(1.3E-05)	9.996E+01(1.3E-05)	9.996E+01(1.1E-03)	9.978E+01(1.8E-03)
DTLZ2-10	6.976E+01(9.1E-04)	9.475E+01(1.4E+00)	9.658E+01(1.1E-02)	9.642E+01(1.1E-03)	1.011E+01(1.2E+04)
DTLZ5IM-10	8.583E+02(3.4E+02)	3.387E+02(1.8E+02)	3.100E+02(1.6E-04)	3.100E+02(1.6E-04)	**1.010E+01(1.2E+04)**
DTLZ7-10	**7.472E-04(1.3E-03)**	1.768E+01(9.8E-02)	1.914E+01(5.9E-04)	1.831E+01(9.0E-03)†	5.948E+01(7.4E-03)
IDTLZ1-10	8.797E+02(4.5E-09)†	4.739E+01(5.0E-07)†	3.384E+01(2.0E-07)†	3.384E+01(2.0E-07)	**5.948E+01(7.4E-07)**
+/ = /−	18/6/6	19/6/5	21/1/8	18/5/7	25/4/1

'†' indicates that SSWA is of statistically significant difference from the corresponding peer algorithm at a 0.05 level by Wilcoxon's rank sum test. The best mean for each case is highlighted in boldface.