Supplementary Files for "Transfer Search Directions Among Decomposed Subtasks for Evolutionary Multitasking in Multiobjective Optimization"

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Table S1: CEC21-MTMO multiobjective multitask optimization benchmark suite.

Problem	Task	Obj	Dim	Inter-task Optima	Pareto Front Shape	Basic Landscape Function	Variable Operation
P1	T1	2	50	Near	Convex + Circle	Schwefel + Rastrigin + Elliptic (Hybrid)	Rotated + Shifed
	T2	2	50		Concave + Square	Schwefel + Rastrigin + Elliptic (Hybrid)	Rotated + Shifed
P2	T1	2	50	Near	Convex + Circle	Griewank + Weierstrass + Rosenbrock + Scaffer (Hybrid)	Rotated + Shifed
	T2	2	50		Convex + Circle	Griewank + Weierstrass + Rosenbrock + Scaffer (Hybrid)	Rotated + Shifed
P3	T1	2	50	Near	Convex + Circle	Katsuura + HappyCat + Griewank + Rosenbrock + Schwefel (Hybrid)	Rotated + Shifed
	T2	2	50		Convex + Square Root	Katsuura + HappyCat + Griewank + Rosenbrock + Schwefel (Hybrid)	Rotated + Shifed
P4	T1	2	50	Medium	Convex + Square Root	Griewank + Rosenbrock (Hybrid)	Rotated + Shifed
	T2	2	50		Convex + Square Root	Griewank + Rosenbrock (Hybrid)	Rotated + Shifed
P5	T1	2	50	Medium	Convex + Circle	Rosenbrock	Rotated + Shifed
	T2	2	50		Concave + Square	Rosenbrock	Rotated + Shifed
P6	T1	2	50	Medium	Convex + Circle	Rastrigin	Rotated + Shifed
	T2	2	50		Convex + Circle	Rastrigin	Rotated + Shifed
P7	T1	2	50	Medium	Convex + Circle	Rastrigin	Shifed
	T2	2	50		Convex + Square Root	Rastrigin	Shifed
P8	T1	2	50	Distant	Convex + Circle	Cigar + HGBat + Rastrigin (Hybrid)	Rotated + Shifed
	T2	2	50		Concave + Square	HGBat + Discus + Griewank + Rosenbrock + Rastrigin (Hybrid)	Rotated + Shifed
P9	T1	2	50	Distant	Convex + Circle	Schwefel	Rotated + Shifed
	T2	2	50		Concave + Square	Cigar + HGBat + Rastrigin (Hybrid)	Rotated + Shifed
P10	T1	2	50	Distant	Convex + Circle	Griewank + Rosenbrock (Hybrid)	Rotated + Shifed
	T2	2	50		Concave + Square	Schwefel + Rastrigin + Elliptic (Hybrid)	Rotated + Shifed

Table S2: Average IGD+ ↓ and standard deviation for comparison experiments with 30 independent runs on CEC21-MTMO benchmark suite.

Task	MTEA/D-TSD	MOEA/D-DE	MTEA/D-DN	EMT-GS	EMT-ET	MO-MFEA-II	MOMFEA-SADE
P1-T1	**8.6860e+03 (3.68e+03)**	1.8650e+05 (9.92e+04) -	1.1486e+05 (6.93e+04) -	6.9197e+05 (6.53e+05) -	2.0340e+06 (1.05e+06) -	1.3653e+06 (6.80e+05) -	3.4789e+06 (1.19e+06) -
P1-T2	1.1072e+04 (5.01e+03)	1.7282e+05 (1.19e+05) -	1.7336e+05 (1.22e+05) -	1.4054e+05 (1.10e+05) -	1.6288e+06 (8.66e+05) -	1.4828e+06 (8.78e+05) -	**1.0034e+04 (7.13e+03) =**
P2-T1	2.0470e+01 (5.09e+00)	2.3822e+01 (1.59e+01) =	2.6545e+01 (1.62e+01) -	**1.3695e+01 (6.62e+00) +**	3.2458e+01 (1.15e+01) -	3.3842e+01 (3.16e+00) -	6.1122e+01 (3.58e+00) -
P2-T2	1.9773e+01 (5.02e+00)	2.0602e+01 (4.53e+00) =	2.5822e+01 (1.37e+01) -	**1.3133e+01 (7.16e+00) +**	3.4392e+01 (1.61e+01) -	3.3302e+01 (2.15e+00) -	2.2010e+01 (3.56e+00) =
P3-T1	**6.9228e+02 (2.48e+02)**	8.6552e+02 (3.23e+02) -	1.4538e+03 (5.00e+02) -	8.2907e+02 (2.98e+02) =	1.2436e+03 (3.16e+02) -	1.0834e+03 (4.48e+02) -	1.4632e+03 (2.06e+02) -
P3-T2	**7.0545e+02 (3.33e+02)**	8.9328e+02 (3.07e+02) -	1.6151e+03 (3.96e+02) -	7.8715e+02 (3.41e+02) =	1.2823e+03 (2.82e+02) -	1.2421e+03 (4.09e+02) -	9.8617e+02 (3.54e+02) -
P4-T1	1.3709e+01 (3.48e+00)	1.6448e+01 (3.11e+00) -	5.4340e+01 (1.80e+01) -	**1.1513e+01 (3.86e+00) +**	3.6644e+01 (1.09e+01) -	1.5713e+01 (5.16e+00) =	1.2249e+05 (5.09e+04) -
P4-T2	**1.6033e+01 (5.16e+00)**	2.2320e+01 (6.14e+00) -	6.5749e+01 (1.78e+01) -	1.7853e+01 (7.10e+00) =	4.4007e+01 (1.26e+01) -	1.6450e+01 (4.10e+00) =	2.8647e+01 (1.53e+00) -
P5-T1	**5.8147e+01 (5.04e+01)**	6.3496e+01 (5.58e+01) =	5.9010e+01 (5.20e+01) =	8.2179e+01 (5.42e+01) =	1.6446e+02 (5.09e+01) -	1.1338e+02 (4.52e+01) -	7.9678e+03 (1.04e+03) -
P5-T2	**2.1794e+01 (3.16e+01)**	3.2554e+01 (3.60e+01) -	3.9473e+01 (4.24e+01) =	5.5462e+01 (4.50e+01) -	1.2225e+02 (5.13e+01) -	7.7817e+01 (6.02e+01) -	3.5222e+01 (3.39e+01) =
P6-T1	1.1570e+02 (2.16e+01)	1.2186e+02 (2.06e+01) =	1.7721e+02 (2.81e+01) -	1.4705e+02 (6.37e+01) =	3.0233e+02 (3.55e+01) -	**8.5366e+01 (2.18e+01) +**	4.4116e+02 (1.88e+01) -
P6-T2	1.2870e+02 (2.58e+01)	1.2853e+02 (2.75e+01) =	1.8663e+02 (3.23e+01) -	1.4996e+02 (6.02e+01) =	2.9770e+02 (4.26e+01) -	**9.4907e+01 (2.10e+01) +**	3.5502e+02 (1.15e+01) -
P7-T1	2.7098e+01 (6.12e+00)	3.0261e+01 (6.59e+00) =	2.3206e+01 (8.35e+00) +	6.9779e+01 (1.34e+01) -	1.0155e+02 (1.57e+01) -	**2.6010e-01 (5.04e-01) +**	4.4015e+02 (1.73e+01) -
P7-T2	1.1595e+01 (2.60e+00)	1.1854e+01 (3.09e+00) =	7.6506e+00 (1.91e+00) +	7.9170e+01 (1.58e+01) -	4.3013e+01 (1.02e+01) -	**2.8863e-01 (3.72e-01) +**	3.6522e+01 (8.40e+00) -
P8-T1	**2.2922e+03 (2.84e+03)**	2.3696e+03 (1.89e+03) =	5.6899e+03 (7.22e+03) -	3.3532e+03 (3.76e+03) =	5.1148e+03 (3.50e+03) -	5.1675e+03 (4.80e+03) -	8.2432e+09 (1.36e+09) -
P8-T2	4.9808e+02 (1.44e+02)	2.3365e+03 (1.34e+03) -	1.1537e+04 (6.29e+03) -	7.7892e+03 (4.37e+03) -	2.3135e+04 (1.25e+04) -	1.6619e+04 (7.64e+03) -	**4.3012e+02 (1.30e+02) =**
P9-T1	**6.1923e+03 (8.70e+02)**	6.2142e+03 (6.60e+02) =	6.5965e+03 (8.41e+02) -	1.0036e+04 (2.06e+03) -	6.2596e+03 (6.94e+02) =	6.7275e+03 (7.81e+02) -	1.3671e+04 (4.68e+02) -
P9-T2	**7.5448e+02 (6.55e+02)**	2.4074e+03 (2.64e+03) -	3.0526e+03 (3.67e+03) -	2.8240e+03 (3.58e+03) -	3.9248e+03 (2.87e+03) -	3.7248e+03 (4.04e+03) -	1.8009e+03 (1.61e+03) -
P10-T1	1.9018e+01 (4.19e+00)	2.4533e+01 (3.25e+00) -	3.5748e+01 (8.30e+00) -	3.2593e+01 (2.10e+00) -	4.5079e+01 (8.27e+00) -	**1.8273e+01 (4.81e+00) =**	6.8162e+05 (2.07e+05) -
P10-T2	**3.8134e+04 (2.08e+04)**	3.6682e+05 (2.31e+05) -	3.6980e+05 (2.36e+05) -	4.0279e+05 (2.72e+05) -	2.1949e+06 (1.45e+06) -	1.8523e+06 (1.00e+06) -	1.3666e+05 (1.12e+05) -
+ / - / =	Base	0 / 11 / 9	2 / 16 / 2	3 / 10 / 7	0 / 19 / 1	4 / 13 / 3	0 / 16 / 4
Ranking ↓	**1.65**	3.05	4.55	3.60	5.90	4.05	5.20

Table S3: Average HV ↑ and standard deviation for comparison experiments with 30 independent runs on CEC21-MTMO multiobjective multitask optimization benchmark suite.

Task	MTEA/D-TSD	MOEA/D-DE	MTEA/D-DN	EMT-GS	EMT-ET	MO-MFEA-II	MOMFEA-SADE
P1-T1	**9.9812e-01 (1.48e-03)**	3.8837e-01 (3.70e-01) -	7.0153e-01 (2.75e-01) -	7.3543e-02 (1.65e-01) -	0 (0) -	3.4501e-03 (1.89e-02) -	0 (0) -
P1-T2	4.3263e-01 (4.02e-01)	5.9637e-02 (1.45e-01) -	1.7851e-01 (2.54e-01) -	3.4482e-01 (3.55e-01) =	0 (0) -	0 (0) -	**8.6034e-01 (1.00e-01) +**
P2-T1	1.8595e-01 (1.93e-01)	1.8480e-01 (1.96e-01) =	8.0555e-02 (1.12e-01) =	**5.3547e-01 (3.27e-01) +**	1.9546e-05 (1.07e-04) -	0 (0) -	0 (0) -
P2-T2	1.3368e-01 (1.84e-01)	7.3797e-02 (1.00e-01) =	2.8250e-02 (5.08e-02) =	**5.1748e-01 (2.79e-01) +**	0 (0) -	0 (0) -	3.6072e-02 (1.35e-01) =
P3-T1	**3.5017e-01 (3.09e-01)**	2.0901e-01 (2.61e-01) =	6.1679e-02 (1.86e-01) -	1.2459e-01 (2.04e-01) -	2.3859e-02 (1.14e-01) -	1.1846e-01 (1.99e-01) -	0 (0) -
P3-T2	**4.2619e-01 (2.58e-01)**	2.7527e-01 (2.37e-01) -	2.9204e-02 (6.48e-02) -	3.6955e-01 (2.47e-01) =	7.2352e-02 (1.17e-01) -	1.2640e-01 (1.97e-01) -	2.0068e-01 (2.61e-01) -
P4-T1	2.8052e-01 (1.62e-01)	1.6195e-01 (1.22e-01) -	0 (0) -	**4.0708e-01 (1.71e-01) +**	5.9165e-03 (3.03e-02) -	2.2749e-01 (1.79e-01) =	0 (0) -
P4-T2	**3.6024e-01 (1.74e-01)**	1.6782e-01 (1.67e-01) -	0 (0) -	3.5274e-01 (2.14e-01) =	9.1485e-03 (5.01e-02) -	3.4645e-01 (1.45e-01) =	2.6419e-02 (4.22e-02) -
P5-T1	4.3794e-01 (4.40e-01)	**4.4573e-01 (4.57e-01) =**	4.3646e-01 (4.27e-01) =	2.6441e-01 (3.80e-01) =	0 (0) -	8.9372e-02 (1.94e-01) -	0 (0) -
P5-T2	**6.9791e-01 (4.20e-01)**	5.6767e-01 (4.60e-01) =	5.1746e-01 (4.65e-01) =	3.8770e-01 (4.28e-01) -	2.8930e-02 (1.55e-01) -	3.3854e-01 (4.45e-01) -	5.2121e-01 (4.52e-01) =
P6-T1	1.8507e-01 (1.80e-01)	1.4002e-01 (1.45e-01) =	2.8392e-03 (9.99e-03) -	1.5179e-01 (2.32e-01) -	0 (0) -	**4.9243e-01 (2.23e-01) +**	0 (0) -
P6-T2	1.4406e-01 (1.62e-01)	1.6549e-01 (1.86e-01) =	5.4893e-03 (2.30e-02) -	1.3875e-01 (2.30e-01) -	0 (0) -	**4.3757e-01 (1.99e-01) +**	0 (0) -
P7-T1	1.9774e-01 (1.88e-01)	1.2157e-01 (1.44e-01) =	4.1052e-01 (3.02e-01) +	0 (0) -	0 (0) -	**9.9809e-01 (1.88e-03) +**	0 (0) -
P7-T2	1.3778e-01 (1.44e-01)	1.3314e-01 (1.47e-01) =	4.0580e-01 (1.27e-01) +	0 (0) -	0 (0) -	**9.4043e-01 (3.40e-02) +**	0 (0) -
P8-T1	**5.2579e-01 (4.24e-01)**	3.4020e-01 (3.88e-01) =	2.6488e-01 (3.71e-01) -	3.2732e-01 (3.66e-01) -	5.4347e-02 (1.43e-01) -	2.5975e-01 (3.55e-01) -	0 (0) -
P8-T2	9.3096e-01 (2.02e-02)	3.4809e-01 (3.28e-01) -	9.3299e-02 (2.00e-01) -	1.3110e-01 (1.82e-01) -	1.3777e-02 (7.55e-02) -	2.5581e-02 (1.12e-01) -	**9.3754e-01 (2.31e-02) =**
P9-T1	**1.5361e-01 (1.20e-01)**	1.3551e-01 (1.08e-01) =	9.4490e-02 (1.24e-01) -	4.4499e-04 (2.44e-03) -	1.1897e-01 (1.04e-01) =	7.7837e-02 (8.88e-02) -	0 (0) -
P9-T2	**4.6093e-01 (3.11e-01)**	3.3690e-01 (3.13e-01) -	2.2528e-01 (2.82e-01) -	2.4256e-01 (2.48e-01) -	7.6773e-02 (1.35e-01) -	2.0312e-01 (2.48e-01) -	8.1786e-02 (1.86e-01) -
P10-T1	4.3005e-01 (2.08e-01)	1.6075e-01 (1.35e-01) -	2.6722e-02 (7.42e-02) -	5.6997e-04 (3.12e-03) -	9.0693e-04 (4.97e-03) -	**4.6664e-01 (2.33e-01) =**	0 (0) -
P10-T2	**4.6702e-01 (3.38e-01)**	1.1328e-01 (1.99e-01) -	2.2509e-01 (2.58e-01) -	2.1455e-01 (2.31e-01) -	0 (0) -	0 (0) -	4.0805e-01 (3.35e-01) =
+ / - / =	Base	0 / 9 / 11	2 / 14 / 4	3 / 13 / 4	0 / 19 / 1	4 / 13 / 3	1 / 15 / 4
Ranking ↓	**1.70**	3.05	4.27	3.55	6.02	4.15	5.25

Table S4: Average IGD+ ↓ and standard deviation for component ablation experiments with 30 independent runs on CEC21-MTMO benchmark suite.

Task	MTEA/D-TSD	w/o-TSD	w/o-STS	w/o-TRC
P1-T1	**8.6860e+03 (3.68e+03)**	1.5754e+05 (8.35e+04) -	1.1445e+04 (7.94e+03) =	3.6579e+04 (1.94e+04) -
P1-T2	**1.1072e+04 (5.01e+03)**	1.5220e+05 (1.12e+05) -	1.1103e+04 (5.94e+03) =	3.4180e+04 (2.52e+04) -
P2-T1	**2.0470e+01 (5.09e+00)**	2.2843e+01 (5.02e+00) =	2.1057e+01 (5.91e+00) =	2.1965e+01 (1.26e+01) =
P2-T2	**1.9773e+01 (5.02e+00)**	2.1523e+01 (4.73e+00) =	2.6328e+01 (1.67e+01) -	2.1943e+01 (4.20e+00) =
P3-T1	6.9228e+02 (2.48e+02)	7.5524e+02 (3.52e+02) =	7.6586e+02 (2.38e+02) =	**5.9840e+02 (2.05e+02) =**
P3-T2	**7.0545e+02 (3.33e+02)**	8.1885e+02 (2.33e+02) =	7.0903e+02 (3.01e+02) =	7.9943e+02 (3.07e+02) =
P4-T1	**1.3709e+01 (3.48e+00)**	1.5092e+01 (4.65e+00) =	1.4362e+01 (3.47e+00) =	1.4731e+01 (3.41e+00) =
P4-T2	**1.6033e+01 (5.16e+00)**	2.1010e+01 (4.93e+00) -	1.8081e+01 (6.08e+00) =	1.7624e+01 (4.40e+00) =
P5-T1	**5.8147e+01 (5.04e+01)**	6.6189e+01 (4.98e+01) =	6.1534e+01 (4.55e+01) =	6.0924e+01 (4.69e+01) =
P5-T2	2.1794e+01 (3.16e+01)	3.1448e+01 (3.42e+01) -	**2.1180e+01 (3.11e+01) =**	2.7180e+01 (3.22e+01) =
P6-T1	1.1570e+02 (2.16e+01)	1.2401e+02 (2.04e+01) =	**1.1494e+02 (1.52e+01) =**	1.2240e+02 (2.37e+01) =
P6-T2	1.2870e+02 (2.58e+01)	1.2679e+02 (2.26e+01) =	1.2795e+02 (2.22e+01) =	**1.2065e+02 (2.09e+01) =**
P7-T1	2.7098e+01 (6.12e+00)	3.0152e+01 (7.97e+00) =	2.7388e+01 (6.36e+00) =	**2.6766e+01 (4.48e+00) =**
P7-T2	1.1595e+01 (2.60e+00)	1.0754e+01 (3.96e+00) =	**1.0664e+01 (2.98e+00) =**	1.1439e+01 (3.52e+00) =
P8-T1	2.2922e+03 (2.84e+03)	2.2378e+03 (2.17e+03) =	2.3760e+03 (2.48e+03) =	**1.9664e+03 (1.78e+03) =**
P8-T2	4.9808e+02 (1.44e+02)	2.1334e+03 (1.33e+03) -	**4.9396e+02 (1.14e+02) =**	5.1902e+02 (1.32e+02) =
P9-T1	6.1923e+03 (8.70e+02)	6.2868e+03 (5.54e+02) =	6.2289e+03 (6.10e+02) =	**5.8542e+03 (7.33e+02) =**
P9-T2	**7.5448e+02 (6.55e+02)**	2.5439e+03 (2.69e+03) -	1.7907e+03 (1.91e+03) -	2.3444e+03 (3.55e+03) -
P10-T1	**1.9018e+01 (4.19e+00)**	2.5668e+01 (4.47e+00) -	2.2704e+01 (4.66e+00) -	2.0566e+01 (4.34e+00) =
P10-T2	**3.8134e+04 (2.08e+04)**	2.7314e+05 (1.47e+05) -	8.7977e+04 (5.48e+04) -	1.4060e+05 (8.47e+04) -
+ / - / =	Base	0 / 12 / 8	0 / 5 / 15	0 / 7 / 13
Ranking ↓	**1.70**	3.55	2.40	2.35

Table S5: Average HV ↑ and standard deviation for component ablation experiments with 30 independent runs on CEC21-MTMO multiobjective multitask optimization benchmark suite.

Task	MTEA/D-TSD	w/o-TSD	w/o-STS	w/o-TRC
P1-T1	**4.6667e-01 (3.31e-01)**	0 (0) -	3.7139e-01 (3.09e-01) =	4.0643e-05 (2.23e-04) -
P1-T2	1.9415e-01 (2.12e-01)	0 (0) -	**2.4579e-01 (2.83e-01)** =	5.6375e-02 (1.09e-01) -
P2-T1	6.7470e-02 (1.05e-01)	3.5902e-02 (8.39e-02) -	6.8699e-02 (1.07e-01) =	**6.8800e-02 (1.10e-01)** =
P2-T2	**1.1082e-01 (1.64e-01)**	5.1993e-02 (1.03e-01) =	2.9549e-02 (5.50e-02) =	3.4536e-02 (6.18e-02) =
P3-T1	1.1221e-01 (2.29e-01)	**1.4458e-01 (2.90e-01)** =	4.8386e-02 (1.68e-01) =	1.3859e-01 (2.68e-01) =
P3-T2	**2.3255e-01 (2.60e-01)**	1.0720e-01 (1.41e-01) =	2.0300e-01 (2.64e-01) =	1.4951e-01 (1.99e-01) =
P4-T1	**1.3107e-01 (1.54e-01)**	9.8743e-02 (1.05e-01) =	1.0171e-01 (1.28e-01) =	9.4504e-02 (1.26e-01) =
P4-T2	**1.8503e-01 (1.89e-01)**	5.1292e-02 (1.15e-01) -	1.3531e-01 (1.65e-01) =	1.2506e-01 (1.38e-01) =
P5-T1	**3.6420e-01 (4.87e-01)**	2.5729e-01 (4.35e-01) =	2.7627e-01 (4.45e-01) =	3.0584e-01 (4.58e-01) =
P5-T2	**2.9204e-01 (3.01e-01)**	1.5426e-01 (2.20e-01) =	2.8708e-01 (2.61e-01) =	2.4651e-01 (2.96e-01) =
P6-T1	**6.1186e-02 (1.25e-01)**	2.8285e-02 (5.61e-02) =	4.1214e-02 (9.13e-02) =	4.6975e-02 (8.10e-02) =
P6-T2	4.2267e-02 (1.04e-01)	4.1333e-02 (9.08e-02) =	3.6898e-02 (8.92e-02) =	**5.6106e-02 (9.24e-02)** =
P7-T1	**6.2613e-02 (1.27e-01)**	4.8823e-02 (9.22e-02) =	5.5991e-02 (9.07e-02) =	3.5514e-02 (5.31e-02) =
P7-T2	7.4338e-02 (1.08e-01)	**1.3829e-01 (1.53e-01)** =	1.2283e-01 (1.36e-01) =	9.3863e-02 (1.40e-01) =
P8-T1	**2.3685e-01 (2.72e-01)**	1.0580e-01 (2.09e-01) =	1.3508e-01 (2.23e-01) =	2.0382e-01 (2.72e-01) =
P8-T2	**2.0591e-01 (1.60e-01)**	1.9040e-03 (1.04e-02) -	1.7501e-01 (1.40e-01) =	9.5751e-02 (1.42e-01) -
P9-T1	3.2273e-02 (3.99e-02)	1.2721e-02 (1.65e-02) =	2.0277e-02 (3.79e-02) =	**5.1680e-02 (7.93e-02)** =
P9-T2	**2.7732e-01 (2.34e-01)**	1.4636e-01 (1.94e-01) -	1.3729e-01 (2.02e-01) -	1.2047e-01 (1.75e-01) -
P10-T1	**1.0987e-01 (1.50e-01)**	3.5855e-03 (1.03e-02) -	2.9575e-02 (8.25e-02) -	7.2560e-02 (1.11e-01) =
P10-T2	**2.7010e-01 (2.77e-01)**	2.2021e-02 (8.58e-02) -	1.9153e-01 (2.23e-01) =	5.6398e-02 (1.30e-01) -
+ / - / =	Base	0 / 11 / 9	0 / 7 / 13	0 / 9 / 11
Ranking ↓	**1.50**	3.35	2.55	2.60

Table S6: Average IGD+ ↓ for parameter tuning experiments with 30 independent runs on CEC21-MTMO multiobjective multitask optimization benchmark suite.

Task	$tr_0 = 0.05$	$tr_0 = 0.1$	$tr_0 = 0.2$	$tr_0 = 0.3$	$cf = 0$	$cf = 0.2$	$cf = 0.4$	$cf = 0.6$	$sn = 2$	$sn = 5$	$sn = 10$	$sn = 20$
P1-T1	1.8174e+04	9.9442e+03	**8.9305e+03**	1.0687e+04	1.1999e+04	9.9442e+03	**8.7748e+03**	1.2012e+04	1.1816e+04	9.9442e+03	**9.7840e+03**	1.0336e+04
P1-T2	2.0525e+04	1.0470e+04	1.0894e+04	**9.3733e+03**	1.1486e+04	1.0470e+04	**9.7128e+03**	1.3566e+04	1.0803e+04	1.0470e+04	**9.5933e+03**	1.0936e+04
P2-T1	2.1698e+01	1.9337e+01	2.2029e+01	**1.9112e+01**	2.2837e+01	**1.9337e+01**	2.6687e+01	2.4905e+01	2.1802e+01	**1.9337e+01**	2.2087e+01	2.3318e+01
P2-T2	2.1256e+01	2.5206e+01	2.2362e+01	**2.0539e+01**	2.3034e+01	2.5206e+01	2.6390e+01	**1.9438e+01**	2.2187e+01	2.5206e+01	**2.1560e+01**	2.2163e+01
P3-T1	**6.0054e+02**	6.8458e+02	7.0291e+02	7.7776e+02	7.8111e+02	**6.8458e+02**	7.7059e+02	7.1090e+02	6.7492e+02	6.8458e+02	8.1107e+02	**6.5299e+02**
P3-T2	7.6390e+02	7.9663e+02	**6.6762e+02**	7.2780e+02	**6.2744e+02**	7.9663e+02	7.0667e+02	7.2742e+02	**7.0336e+02**	7.9663e+02	7.3516e+02	7.9913e+02
P4-T1	1.5067e+01	1.4397e+01	1.3896e+01	**1.3490e+01**	1.3738e+01	1.4397e+01	**1.2625e+01**	1.3783e+01	**1.3884e+01**	1.4397e+01	1.3971e+01	1.5458e+01
P4-T2	1.8256e+01	1.8027e+01	1.6307e+01	**1.6236e+01**	1.5691e+01	1.8027e+01	**1.4417e+01**	1.6514e+01	1.8089e+01	1.8027e+01	1.5811e+01	**1.5733e+01**
P5-T1	6.2662e+01	7.1277e+01	**2.8376e+01**	5.4620e+01	**4.5489e+01**	7.1277e+01	5.4121e+01	4.5698e+01	**5.2239e+01**	7.1277e+01	5.9089e+01	6.2344e+01
P5-T2	2.6001e+01	**2.3630e+01**	2.8223e+01	3.0913e+01	2.7826e+01	2.3630e+01	2.4146e+01	**2.0425e+01**	**2.1641e+01**	2.3630e+01	2.5812e+01	3.4987e+01
P6-T1	1.2097e+02	1.2031e+02	**1.1267e+02**	1.1927e+02	1.1896e+02	1.2031e+02	**1.1537e+02**	1.1773e+02	1.1876e+02	1.2031e+02	**1.1819e+02**	1.2241e+02
P6-T2	1.2468e+02	1.2512e+02	**1.1897e+02**	1.2239e+02	1.2762e+02	1.2512e+02	**1.1925e+02**	1.2642e+02	1.2476e+02	1.2512e+02	1.2469e+02	**1.2261e+02**
P7-T1	2.7414e+01	2.7725e+01	**2.6966e+01**	2.8657e+01	**2.6622e+01**	2.7725e+01	2.8169e+01	2.9221e+01	2.8319e+01	2.7725e+01	**2.7256e+01**	2.7865e+01
P7-T2	1.2165e+01	**1.0306e+01**	1.0772e+01	1.2269e+01	1.0594e+01	**1.0306e+01**	1.0780e+01	1.0891e+01	1.0983e+01	1.0306e+01	**1.0115e+01**	1.0833e+01
P8-T1	1.5613e+03	1.6648e+03	2.0914e+03	**1.4286e+03**	2.1196e+03	**1.6648e+03**	2.3064e+03	2.5477e+03	1.9163e+03	**1.6648e+03**	1.7527e+03	1.8920e+03
P8-T2	4.8819e+02	**4.1812e+02**	4.5464e+02	4.5322e+02	4.5686e+02	**4.1812e+02**	4.5796e+02	5.1045e+02	4.4626e+02	**4.1812e+02**	4.9096e+02	5.0761e+02
P9-T1	6.1870e+03	6.5016e+03	**5.9282e+03**	6.0436e+03	6.3877e+03	6.5016e+03	6.1737e+03	**6.1074e+03**	**6.0996e+03**	6.5016e+03	6.1567e+03	6.1657e+03
P9-T2	1.2003e+03	8.4408e+02	**8.2997e+02**	.3936e+02	8.8135e+02	8.4408e+02	**6.8172e+02**	1.0985e+03	1.3636e+03	8.4408e+02	**4.8693e+02**	1.1573e+03
P10-T1	2.2968e+01	2.2616e+01	1.9139e+01	**1.8945e+01**	2.2240e+01	2.2616e+01	1.9445e+01	**1.9046e+01**	2.3435e+01	2.2616e+01	2.1254e+01	**2.0365e+01**
P10-T2	8.5907e+04	4.6298e+04	**4.2715e+04**	4.8090e+04	5.7670e+04	4.6298e+04	**3.5704e+04**	4.3896e+04	6.0486e+04	4.6298e+04	5.2351e+04	**4.2402e+04**
Ranking ↓	3.17	2.67	**2.00**	2.15	2.57	2.55	**2.15**	2.72	2.67	2.50	**2.00**	2.82