Table S3.1. The median, mean, and standard deviation of the best fitness values obtained by MaTDE, EMaTO-MKT, and MaT-AMaLGaM over 30 independent runs on **S1** in WCCI2020 single-objective many-tasking benchmark suite. The entries highlighted in **bold** indicate that they are the best optimization results.

Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM	Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM
T_1	median	1.06e-06	**9.09e-25**	**7.67e-23**	T_{26}	median	1.43e-06	**7.36e-25**	**7.67e-23**
	mean	1.31e-06	**6.27e-16**	**7.90e-23**		mean	2.16e-06	**5.75e-12**	**7.90e-23**
	std	9.34e-07	**3.44e-15**	**1.58e-23**		std	2.01e-06	**3.15e-11**	**1.58e-23**
T_2	median	1.06e-06	**8.05e-25**	**7.56e-23**	T_{27}	median	1.24e-06	**8.25e-25**	**7.56e-23**
	mean	1.39e-06	**8.61e-25**	**8.29e-23**		mean	2.05e-06	**8.81e-25**	**8.29e-23**
	std	1.22e-06	**2.77e-25**	**2.32e-23**		std	2.36e-06	**3.20e-25**	**2.32e-23**
T_3	median	1.17e-06	**7.96e-25**	**7.81e-23**	T_{28}	median	1.23e-06	**8.49e-25**	**7.81e-23**
	mean	1.34e-06	**8.97e-13**	**8.32e-23**		mean	1.67e-06	**8.38e-25**	**8.32e-23**
	std	6.78e-07	**4.91e-12**	**1.62e-23**		std	1.56e-06	**2.75e-25**	**1.62e-23**
T_4	median	1.68e-06	**8.23e-25**	**7.68e-23**	T_{29}	median	1.38e-06	**8.72e-25**	**7.68e-23**
	mean	1.77e-06	**9.89e-25**	**8.38e-23**		mean	1.85e-06	**9.42e-25**	**8.38e-23**
	std	9.63e-07	**4.23e-25**	**2.22e-23**		std	1.33e-06	**2.84e-25**	**2.22e-23**
T_5	median	9.24e-07	**7.36e-25**	**7.73e-23**	T_{30}	median	9.88e-07	**7.81e-25**	**7.73e-23**
	mean	1.16e-06	**1.40e-24**	**8.38e-23**		mean	1.24e-06	**1.92e-24**	**8.38e-23**
	std	9.71e-07	**3.36e-24**	**2.74e-23**		std	7.86e-07	**5.85e-24**	**2.74e-23**
T_6	median	1.27e-06	**9.22e-25**	**8.12e-23**	T_{31}	median	9.92e-07	**7.46e-25**	**8.12e-23**
	mean	1.44e-06	**1.63e-10**	**8.39e-23**		mean	1.34e-06	**3.30e-18**	**8.39e-23**
	std	8.55e-07	**8.94e-10**	**1.79e-23**		std	9.26e-07	**1.80e-17**	**1.79e-23**
T_7	median	1.04e-06	**7.37e-25**	**8.00e-23**	T_{32}	median	1.19e-06	**8.92e-25**	**8.00e-23**
	mean	1.81e-05	**8.95e-25**	**8.52e-23**		mean	1.50e-06	**6.22e-24**	**8.52e-23**
	std	7.60e-05	**5.59e-25**	**2.01e-23**		std	1.15e-06	**2.89e-23**	**2.01e-23**
T_8	median	1.19e-06	**8.47e-25**	**7.97e-23**	T_{33}	median	1.17e-06	**8.58e-25**	**7.97e-23**
	mean	1.36e-06	**5.02e-08**	**8.76e-23**		mean	2.68e-06	**9.19e-25**	**8.76e-23**
	std	9.12e-07	**2.75e-07**	**3.19e-23**		std	6.29e-06	**3.17e-25**	**3.19e-23**
T_9	median	1.19e-06	**8.35e-25**	**8.03e-23**	T_{34}	median	1.25e-06	**7.57e-25**	**8.03e-23**
	mean	1.45e-06	**9.42e-25**	**8.44e-23**		mean	2.03e-06	**2.02e-06**	**8.44e-23**
	std	7.48e-07	**4.09e-25**	**2.06e-23**		std	2.53e-06	**1.11e-05**	**2.06e-23**
T_{10}	median	1.45e-06	**7.57e-25**	**8.29e-23**	T_{35}	median	9.24e-07	**7.95e-25**	**8.29e-23**
	mean	2.00e-06	**1.12e-07**	**8.92e-23**		mean	1.02e-06	**8.49e-25**	**8.92e-23**
	std	1.86e-06	**6.11e-07**	**2.25e-23**		std	3.70e-07	**2.63e-25**	**2.25e-23**
T_{11}	median	1.27e-06	**9.27e-25**	**7.60e-23**	T_{36}	median	1.72e-06	**8.06e-25**	**7.60e-23**
	mean	1.49e-06	**1.26e-24**	**7.99e-23**		mean	2.46e-06	**3.78e-21**	**7.99e-23**
	std	9.27e-07	**1.64e-24**	**2.23e-23**		std	2.95e-06	**2.07e-20**	**2.23e-23**
T_{12}	median	1.09e-06	**7.55e-25**	**7.54e-23**	T_{37}	median	1.03e-06	**8.49e-25**	**7.54e-23**
	mean	1.36e-06	**1.76e-11**	**8.08e-23**		mean	1.14e-06	**1.37e-24**	**8.08e-23**
	std	1.13e-06	**9.62e-11**	**2.42e-23**		std	7.09e-07	**2.95e-24**	**2.42e-23**
T_{13}	median	1.22e-06	**8.05e-25**	**7.77e-23**	T_{38}	median	1.06e-06	**8.39e-25**	**7.77e-23**
	mean	1.30e-06	**1.39e-04**	**7.91e-23**		mean	1.29e-06	**9.54e-25**	**7.91e-23**
	std	5.39e-07	**7.62e-04**	**1.39e-23**		std	8.70e-07	**4.39e-25**	**1.39e-23**
T_{14}	median	8.86e-07	**8.75e-25**	**7.18e-23**	T_{39}	median	1.20e-06	**8.47e-25**	**7.18e-23**
	mean	1.08e-06	**1.00e-24**	**8.30e-23**		mean	1.41e-06	**1.01e-24**	**8.30e-23**
	std	5.35e-07	**4.10e-25**	**2.39e-23**		std	8.97e-07	**6.13e-25**	**2.39e-23**
T_{15}	median	1.18e-06	**9.29e-25**	**7.08e-23**	T_{40}	median	8.87e-07	**7.95e-25**	**7.08e-23**
	mean	1.30e-06	**1.03e-24**	**7.34e-23**		mean	1.01e-06	**1.25e-24**	**7.34e-23**
	std	5.71e-07	**3.44e-25**	**1.41e-23**		std	5.71e-07	**2.44e-24**	**1.41e-23**
T_{16}	median	1.06e-06	**8.49e-25**	**7.95e-23**	T_{41}	median	1.28e-06	**8.51e-25**	**7.95e-23**
	mean	2.02e-06	**1.44e-12**	**8.07e-23**		mean	1.40e-06	**8.56e-25**	**8.07e-23**
	std	2.84e-06	**7.89e-12**	**1.71e-23**		std	8.39e-07	**2.00e-25**	**1.71e-23**
T_{17}	median	1.21e-06	**6.91e-25**	**7.62e-23**	T_{42}	median	1.23e-06	**8.15e-25**	**7.62e-23**
	mean	1.55e-06	**7.69e-25**	**8.16e-23**		mean	1.27e-06	**2.95e-24**	**8.16e-23**
	std	1.14e-06	**2.47e-25**	**1.83e-23**		std	5.96e-07	**1.16e-23**	**1.83e-23**
T_{18}	median	1.19e-06	**8.96e-25**	**7.71e-23**	T_{43}	median	1.46e-06	**8.26e-25**	**7.71e-23**
	mean	1.38e-06	**1.54e-21**	**1.99e-23**		mean	1.45e-06	**8.91e-25**	**1.99e-23**
	std	8.97e-07	**8.42e-21**	**7.67e-23**		std	8.43e-07	**3.40e-25**	**7.67e-23**
T_{19}	median	1.30e-06	**8.02e-25**	**7.92e-23**	T_{44}	median	1.10e-06	**8.07e-25**	**7.92e-23**
	mean	1.68e-06	**2.10e-22**	**1.21e-23**		mean	1.21e-06	**8.73e-25**	**1.21e-23**
	std	1.53e-06	**1.14e-21**	**7.94e-23**		std	6.32e-07	**3.04e-25**	**7.94e-23**
T_{20}	median	1.43e-06	**9.33e-25**	**8.25e-23**	T_{45}	median	1.84e-06	**7.39e-25**	**8.25e-23**
	mean	1.93e-06	**1.50e-24**	**1.89e-23**		mean	2.00e-06	**7.86e-25**	**1.89e-23**
	std	1.97e-06	**3.18e-24**	**7.68e-23**		std	1.16e-06	**2.46e-25**	**7.68e-23**
T_{21}	median	8.57e-07	**7.71e-25**	**8.44e-23**	T_{46}	median	9.52e-07	**7.98e-25**	**8.44e-23**
	mean	1.30e-06	**8.19e-25**	**2.62e-23**		mean	1.21e-06	**8.52e-25**	**2.62e-23**
	std	9.86e-07	**2.94e-25**	**7.80e-23**		std	6.41e-07	**2.87e-25**	**7.80e-23**
T_{22}	median	1.13e-06	**8.51e-25**	**8.44e-23**	T_{47}	median	9.81e-07	**9.19e-25**	**8.44e-23**
	mean	1.31e-06	**1.44e-24**	**2.60e-23**		mean	1.26e-06	**2.46e-15**	**2.60e-23**
	std	6.27e-07	**2.77e-24**	**7.44e-23**		std	1.04e-06	**1.35e-14**	**7.44e-23**
T_{23}	median	1.52e-06	**8.14e-25**	**7.73e-23**	T_{48}	median	1.11e-06	**7.24e-25**	**7.73e-23**
	mean	1.68e-06	**9.28e-21**	**2.06e-23**		mean	1.12e-06	**8.33e-25**	**2.06e-23**
	std	8.12e-07	**3.72e-20**	**7.66e-23**		std	6.47e-07	**2.68e-25**	**7.66e-23**
T_{24}	median	1.08e-06	**7.69e-25**	**8.08e-23**	T_{49}	median	1.25e-06	**8.19e-25**	**8.08e-23**
	mean	1.20e-06	**4.80e-24**	**1.91e-23**		mean	1.28e-06	**4.33e-06**	**1.91e-23**
	std	6.09e-07	**2.14e-23**	**7.50e-23**		std	8.76e-07	**2.37e-05**	**7.50e-23**
T_{25}	median	8.34e-07	**7.33e-25**	**7.79e-23**	T_{50}	median	9.91e-08	**7.60e-25**	**7.79e-23**
	mean	1.09e-06	**8.62e-25**	**2.02e-23**		mean	1.21e-07	**8.20e-25**	**2.02e-23**
	std	6.35e-07	**4.03e-25**	**7.71e-23**		std	8.43e-08	**3.16e-25**	**7.71e-23**

Table S3.2. The median, mean, and standard deviation of the best fitness values obtained by MaTDE, EMaTO-MKT, and MaT-AMaLGaM over 30 independent runs on **S2** in WCCI2020 single-objective many-tasking benchmark suite. The entries highlighted in **bold** indicate that they are the best optimization results.

Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM	Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM
T_1	median	1.14e+02	4.84e+01	**4.12e+01**	T_{26}	median	9.38e+01	4.85e+01	**4.08e+01**
	mean	1.26e+02	7.29e+01	**5.64e+01**		mean	8.92e+01	7.80e+01	**4.68e+01**
	std	7.68e+01	6.92e+01	**4.01e+01**		std	4.14e+01	5.24e+01	**1.92e+01**
T_2	median	2.40e+02	1.39e+02	**4.08e+01**	T_{27}	median	1.25e+02	4.86e+01	**4.09e+01**
	mean	3.07e+02	1.92e+02	**6.16e+01**		mean	1.32e+02	1.12e+02	**5.65e+01**
	std	2.69e+02	2.25e+02	**3.61e+01**		std	7.46e+01	1.79e+02	**3.56e+01**
T_3	median	1.05e+02	4.91e+01	**4.07e+01**	T_{28}	median	4.95e+01	4.85e+01	**4.11e+01**
	mean	1.24e+02	1.26e+02	**5.95e+01**		mean	6.88e+01	1.02e+02	**6.07e+01**
	std	8.42e+01	1.88e+02	**7.17e+01**		std	2.71e+01	1.78e+02	**5.05e+01**
T_4	median	1.50e+02	4.91e+01	**4.17e+01**	T_{29}	median	5.02e+01	4.85e+01	**4.14e+01**
	mean	1.59e+02	1.62e+02	**8.48e+01**		mean	8.05e+01	9.80e+01	**5.70e+01**
	std	7.39e+01	2.18e+02	**8.40e+01**		std	5.27e+01	1.03e+02	**3.99e+01**
T_5	median	1.67e+02	4.95e+01	**4.11e+01**	T_{30}	median	1.55e+02	9.50e+01	**4.09e+01**
	mean	1.92e+02	1.04e+02	**7.09e+01**		mean	2.29e+02	1.96e+02	**7.48e+01**
	std	8.76e+01	8.42e+01	**7.20e+01**		std	2.34e+02	2.94e+02	**1.07e+02**
T_6	median	7.40e+01	4.88e+01	**4.06e+01**	T_{31}	median	1.27e+02	5.16e+01	**4.08e+01**
	mean	1.18e+02	1.52e+02	**4.45e+01**		mean	1.50e+02	1.33e+02	**5.88e+01**
	std	1.46e+02	3.62e+02	**1.97e+01**		std	1.04e+02	1.19e+02	**6.60e+01**
T_7	median	1.16e+02	4.84e+01	**4.11e+01**	T_{32}	median	2.08e+02	1.23e+02	**4.08e+01**
	mean	1.39e+02	1.83e+02	**5.75e+01**		mean	2.16e+02	1.22e+02	**4.28e+01**
	std	7.38e+01	4.45e+02	**5.02e+01**		std	1.11e+02	7.63e+01	**1.09e+01**
T_8	median	8.49e+01	1.02e+02	**4.09e+01**	T_{33}	median	9.92e+01	4.83e+01	**4.14e+01**
	mean	9.19e+01	1.18e+02	**4.65e+01**		mean	9.52e+01	6.48e+01	**7.44e+01**
	std	4.70e+01	8.88e+01	**1.82e+01**		std	4.11e+01	6.42e+01	**9.22e+01**
T_9	median	1.85e+02	4.91e+01	**4.14e+01**	T_{34}	median	6.30e+01	4.82e+01	**4.12e+01**
	mean	2.49e+02	2.63e+02	**5.18e+01**		mean	8.54e+01	1.14e+02	**5.31e+01**
	std	2.10e+02	3.23e+02	**2.84e+01**		std	7.02e+01	1.73e+02	**3.10e+01**
T_{10}	median	5.05e+01	4.80e+01	**4.14e+01**	T_{35}	median	9.73e+01	4.83e+01	**4.06e+01**
	mean	9.19e+01	9.58e+01	**6.88e+01**		mean	8.51e+01	8.93e+01	**7.70e+01**
	std	7.45e+01	1.52e+02	**6.21e+01**		std	3.11e+01	1.28e+02	**7.67e+01**
T_{11}	median	8.40e+01	4.85e+01	**4.08e+01**	T_{36}	median	1.13e+02	4.91e+01	**4.04e+01**
	mean	9.26e+01	9.00e+01	**4.73e+01**		mean	1.46e+02	1.66e+02	**5.80e+01**
	std	4.10e+01	1.41e+02	**1.92e+01**		std	8.81e+01	3.50e+02	**4.45e+01**
T_{12}	median	9.12e+01	4.89e+01	**4.05e+01**	T_{37}	median	8.30e+01	4.90e+01	**4.05e+01**
	mean	9.17e+01	8.19e+01	**6.95e+01**		mean	1.09e+02	9.91e+01	**4.84e+01**
	std	4.53e+01	5.24e+01	**1.24e+02**		std	6.97e+01	1.03e+02	**2.93e+01**
T_{13}	median	9.96e+01	4.91e+01	**4.05e+01**	T_{38}	median	1.98e+02	4.89e+01	**4.06e+01**
	mean	1.44e+02	2.10e+02	**5.28e+01**		mean	2.24e+02	2.23e+02	**5.62e+01**
	std	1.50e+02	5.18e+02	**3.28e+01**		std	1.19e+02	5.12e+02	**4.30e+01**
T_{14}	median	6.94e+01	4.85e+01	**4.06e+01**	T_{39}	median	3.90e+02	1.64e+02	**4.09e+01**
	mean	7.44e+01	8.60e+01	**6.01e+01**		mean	4.31e+02	4.91e+02	**4.99e+01**
	std	3.03e+01	7.90e+01	**4.39e+01**		std	3.28e+02	8.43e+02	**2.86e+01**
T_{15}	median	1.69e+02	1.16e+02	**4.06e+01**	T_{40}	median	1.22e+02	4.85e+01	**4.11e+01**
	mean	2.98e+02	5.23e+02	**5.88e+01**		mean	1.27e+02	1.26e+02	**5.48e+01**
	std	3.44e+02	1.20e+03	**5.28e+01**		std	6.80e+01	2.10e+02	**4.18e+01**
T_{16}	median	5.12e+01	4.77e+01	**4.10e+01**	T_{41}	median	2.35e+02	1.40e+02	**4.31e+01**
	mean	7.79e+01	9.54e+01	**4.98e+01**		mean	2.69e+02	3.86e+02	**7.07e+01**
	std	4.69e+01	1.48e+02	**3.83e+01**		std	1.09e+02	6.41e+02	**5.32e+01**
T_{17}	median	1.07e+02	4.89e+01	**4.09e+01**	T_{42}	median	6.48e+01	4.92e+01	**4.03e+01**
	mean	1.17e+02	1.22e+02	**7.00e+01**		mean	8.98e+01	1.52e+02	**7.42e+01**
	std	5.76e+01	2.65e+02	**8.86e+01**		std	6.43e+01	2.84e+02	**1.20e+02**
T_{18}	median	1.76e+02	4.91e+01	**4.14e+01**	T_{43}	median	8.81e+01	4.85e+01	**4.07e+01**
	mean	2.25e+02	1.67e+02	**7.12e+01**		mean	9.58e+01	6.84e+01	**7.10e+01**
	std	1.57e+02	2.75e+02	**5.69e+01**		std	5.74e+01	5.23e+01	**6.00e+01**
T_{19}	median	5.37e+01	4.82e+01	**4.09e+01**	T_{44}	median	9.83e+01	4.86e+01	**4.07e+01**
	mean	7.61e+01	1.27e+02	**6.16e+01**		mean	1.12e+02	2.44e+02	**5.94e+01**
	std	3.73e+01	2.62e+02	**4.83e+01**		std	7.87e+01	6.61e+02	**4.70e+01**
T_{20}	median	1.26e+02	4.86e+01	**4.04e+01**	T_{45}	median	1.22e+02	4.91e+01	**4.12e+01**
	mean	1.14e+02	7.69e+01	**6.79e+01**		mean	1.56e+02	2.73e+02	**6.84e+01**
	std	4.38e+01	5.97e+01	**6.72e+01**		std	1.09e+02	7.73e+02	**7.75e+01**
T_{21}	median	8.26e+01	7.94e+01	**4.13e+01**	T_{46}	median	7.44e+01	4.91e+01	**4.09e+01**
	mean	1.11e+02	1.51e+02	**5.58e+01**		mean	1.10e+02	9.33e+01	**7.62e+01**
	std	8.41e+01	2.25e+02	**3.08e+01**		std	9.55e+01	6.61e+01	**1.10e+02**
T_{22}	median	9.62e+01	4.81e+01	**4.13e+01**	T_{47}	median	2.26e+02	1.10e+02	**4.00e+01**
	mean	9.75e+01	9.26e+01	**5.74e+01**		mean	3.19e+02	1.27e+02	**5.30e+01**
	std	4.33e+01	1.26e+02	**4.70e+01**		std	2.45e+02	1.34e+02	**4.02e+01**
T_{23}	median	1.31e+02	4.87e+01	**4.02e+01**	T_{48}	median	1.40e+02	4.92e+01	**4.07e+01**
	mean	1.41e+02	1.08e+02	**6.93e+01**		mean	2.14e+02	2.44e+02	**4.78e+01**
	std	7.53e+01	1.90e+02	**5.61e+01**		std	1.72e+02	3.96e+02	**2.16e+01**
T_{24}	median	7.73e+01	4.89e+01	**4.09e+01**	T_{49}	median	1.03e+02	4.86e+01	**4.09e+01**
	mean	7.59e+01	1.46e+02	**5.12e+01**		mean	1.18e+02	1.68e+02	**5.85e+01**
	std	2.36e+01	1.93e+02	**2.42e+01**		std	6.66e+01	2.90e+02	**4.15e+01**
T_{25}	median	1.01e+02	4.87e+01	**4.08e+01**	T_{50}	median	1.03e+02	4.88e+01	**4.16e+01**
	mean	1.08e+02	2.76e+02	**6.21e+01**		mean	1.10e+02	2.24e+02	**8.21e+01**
	std	5.89e+01	4.29e+02	**9.69e+01**		std	4.86e+01	4.56e+02	**7.94e+01**

Table S3.3. The median, mean, and standard deviation of the best fitness values obtained by MaTDE, EMaTO-MKT, and MaT-AMaLGaM over 30 independent runs on **S3** in WCCI2020 single-objective many-tasking benchmark suite. The entries highlighted in **bold** indicate that they are the best optimization results.

Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM	Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM
T_1	median	2.74e+02	1.05e+02	**4.23e+01**	T_{26}	median	2.98e+02	9.45e+01	**4.78e+01**
	mean	2.45e+02	1.09e+02	**4.55e+01**		mean	2.81e+02	1.04e+02	**4.69e+01**
	std	6.48e+01	3.27e+01	**1.04e+01**		std	5.13e+01	2.92e+01	**8.45e+00**
T_2	median	2.83e+02	9.85e+01	**4.38e+01**	T_{27}	median	3.11e+02	1.11e+02	**4.97e+01**
	mean	2.64e+02	1.09e+02	**4.42e+01**		mean	2.87e+02	1.12e+02	**4.87e+01**
	std	6.58e+01	3.35e+01	**7.98e+00**		std	5.95e+01	2.85e+01	**1.16e+01**
T_3	median	2.62e+02	1.05e+02	**4.28e+01**	T_{28}	median	2.96e+02	1.05e+02	**4.53e+01**
	mean	2.58e+02	1.03e+02	**4.37e+01**		mean	2.74e+02	1.09e+02	**4.47e+01**
	std	5.90e+01	2.08e+01	**7.94e+00**		std	5.05e+01	3.12e+01	**8.88e+00**
T_4	median	3.00e+02	1.09e+02	**4.83e+01**	T_{29}	median	2.76e+02	1.02e+02	**4.43e+01**
	mean	2.76e+02	1.08e+02	**4.73e+01**		mean	2.72e+02	1.01e+02	**4.37e+01**
	std	5.14e+01	2.01e+01	**8.36e+00**		std	5.00e+01	2.59e+01	**8.27e+00**
T_5	median	2.87e+02	1.03e+02	**4.63e+01**	T_{30}	median	2.86e+02	1.00e+02	**5.02e+01**
	mean	2.65e+02	1.02e+02	**4.78e+01**		mean	2.64e+02	1.04e+02	**4.91e+01**
	std	6.19e+01	2.65e+01	**7.48e+00**		std	8.50e+01	2.40e+01	**9.55e+00**
T_6	median	2.79e+02	1.14e+02	**4.93e+01**	T_{31}	median	2.82e+02	1.00e+02	**4.53e+01**
	mean	2.75e+02	1.14e+02	**4.93e+01**		mean	2.75e+02	1.07e+02	**4.53e+01**
	std	6.03e+01	2.95e+01	**1.06e+01**		std	5.07e+01	3.73e+01	**1.07e+01**
T_7	median	3.09e+02	1.10e+02	**4.53e+01**	T_{32}	median	2.62e+02	9.75e+01	**4.48e+01**
	mean	2.95e+02	1.11e+02	**4.59e+01**		mean	2.68e+02	1.05e+02	**4.47e+01**
	std	7.04e+01	2.86e+01	**9.96e+00**		std	4.63e+01	2.70e+01	**7.99e+00**
T_8	median	2.93e+02	1.17e+02	**4.73e+01**	T_{33}	median	2.92e+02	9.45e+01	**4.43e+01**
	mean	2.93e+02	1.16e+02	**4.70e+01**		mean	2.71e+02	9.75e+01	**4.49e+01**
	std	4.59e+01	3.27e+01	**9.22e+00**		std	7.08e+01	2.06e+01	**7.83e+00**
T_9	median	2.75e+02	1.06e+02	**4.43e+01**	T_{34}	median	2.82e+02	1.11e+02	**4.83e+01**
	mean	2.58e+02	1.08e+02	**4.47e+01**		mean	2.62e+02	1.14e+02	**4.72e+01**
	std	6.21e+01	2.63e+01	**9.46e+00**		std	6.38e+01	2.71e+01	**9.97e+00**
T_{10}	median	2.80e+02	1.04e+02	**4.78e+01**	T_{35}	median	2.77e+02	1.02e+02	**4.68e+01**
	mean	2.61e+02	1.03e+02	**4.76e+01**		mean	2.59e+02	1.05e+02	**4.78e+01**
	std	5.85e+01	2.07e+01	**9.52e+00**		std	6.98e+01	2.95e+01	**1.04e+01**
T_{11}	median	2.81e+02	1.12e+02	**4.13e+01**	T_{36}	median	2.92e+02	1.11e+02	**4.58e+01**
	mean	2.80e+02	1.12e+02	**4.38e+01**		mean	2.64e+02	1.12e+02	**4.59e+01**
	std	5.81e+01	3.15e+01	**9.58e+00**		std	6.67e+01	2.94e+01	**9.95e+00**
T_{12}	median	2.87e+02	1.12e+02	**4.73e+01**	T_{37}	median	2.65e+02	1.09e+02	**4.78e+01**
	mean	2.78e+02	1.12e+02	**4.68e+01**		mean	2.64e+02	1.09e+02	**4.66e+01**
	std	5.46e+01	2.84e+01	**1.03e+01**		std	4.61e+01	2.46e+01	**9.02e+00**
T_{13}	median	3.04e+02	9.85e+01	**4.18e+01**	T_{38}	median	2.94e+02	1.05e+02	**4.78e+01**
	mean	2.77e+02	1.07e+02	**4.42e+01**		mean	2.85e+02	1.16e+02	**4.65e+01**
	std	7.29e+01	3.62e+01	**9.42e+00**		std	5.11e+01	2.79e+01	**1.10e+01**
T_{14}	median	2.85e+02	1.00e+02	**4.58e+01**	T_{39}	median	2.92e+02	1.22e+02	**4.53e+01**
	mean	2.85e+02	1.03e+02	**4.64e+01**		mean	2.59e+02	1.14e+02	**4.45e+01**
	std	4.59e+01	2.58e+01	**9.11e+00**		std	7.79e+01	3.08e+01	**8.82e+00**
T_{15}	median	2.95e+02	1.10e+02	**4.93e+01**	T_{40}	median	2.67e+02	9.60e+01	**5.02e+01**
	mean	2.94e+02	1.07e+02	**4.86e+01**		mean	2.57e+02	1.04e+02	**4.96e+01**
	std	4.59e+01	2.46e+01	**1.04e+01**		std	5.98e+01	2.72e+01	**9.05e+00**
T_{16}	median	2.97e+02	1.02e+02	**4.93e+01**	T_{41}	median	2.90e+02	1.07e+02	**4.97e+01**
	mean	2.78e+02	1.08e+02	**4.87e+01**		mean	2.82e+02	1.09e+02	**4.77e+01**
	std	5.55e+01	2.69e+01	**9.31e+00**		std	4.20e+01	2.59e+01	**9.18e+00**
T_{17}	median	2.82e+02	1.11e+02	**4.58e+01**	T_{42}	median	2.63e+02	1.03e+02	**4.68e+01**
	mean	2.78e+02	1.09e+02	**4.68e+01**		mean	2.48e+02	1.11e+02	**4.65e+01**
	std	4.33e+01	2.25e+01	**8.73e+00**		std	6.84e+01	2.26e+01	**1.05e+01**
T_{18}	median	2.76e+02	1.15e+02	**4.63e+01**	T_{43}	median	3.00e+02	1.11e+02	**4.58e+01**
	mean	2.64e+02	1.17e+02	**4.64e+01**		mean	2.76e+02	1.10e+02	**4.53e+01**
	std	6.59e+01	2.86e+01	**8.90e+00**		std	5.99e+01	2.90e+01	**8.59e+00**
T_{19}	median	2.74e+02	1.03e+02	**3.98e+01**	T_{44}	median	2.86e+02	1.04e+02	**4.58e+01**
	mean	2.63e+02	1.05e+02	**4.20e+01**		mean	2.80e+02	1.09e+02	**4.51e+01**
	std	5.11e+01	2.58e+01	**8.62e+00**		std	3.30e+01	3.20e+01	**9.82e+00**
T_{20}	median	2.92e+02	1.08e+02	**4.48e+01**	T_{45}	median	2.72e+02	1.02e+02	**4.93e+01**
	mean	2.72e+02	1.06e+02	**4.53e+01**		mean	2.50e+02	1.04e+02	**4.73e+01**
	std	6.73e+01	2.20e+01	**7.06e+00**		std	6.35e+01	2.60e+01	**1.05e+01**
T_{21}	median	2.85e+02	1.06e+02	**4.43e+01**	T_{46}	median	3.03e+02	1.05e+02	**4.38e+01**
	mean	2.75e+02	1.05e+02	**4.63e+01**		mean	2.86e+02	1.06e+02	**4.41e+01**
	std	3.79e+01	2.47e+01	**9.87e+00**		std	6.59e+01	2.85e+01	**7.81e+00**
T_{22}	median	2.95e+02	1.03e+02	**5.02e+01**	T_{47}	median	2.80e+02	9.85e+01	**4.33e+01**
	mean	2.76e+02	1.06e+02	**4.95e+01**		mean	2.64e+02	1.08e+02	**4.47e+01**
	std	4.98e+01	2.43e+01	**9.79e+00**		std	5.44e+01	2.81e+01	**1.05e+01**
T_{23}	median	2.94e+02	1.08e+02	**4.48e+01**	T_{48}	median	3.03e+02	1.13e+02	**4.97e+01**
	mean	2.76e+02	1.16e+02	**4.57e+01**		mean	2.73e+02	1.12e+02	**4.93e+01**
	std	5.97e+01	3.08e+01	**7.13e+00**		std	7.90e+01	2.62e+01	**1.01e+01**
T_{24}	median	2.76e+02	1.08e+02	**4.33e+01**	T_{49}	median	2.83e+02	9.85e+01	**4.43e+01**
	mean	2.71e+02	1.12e+02	**4.37e+01**		mean	2.78e+02	1.01e+02	**4.47e+01**
	std	5.02e+01	3.42e+01	**8.30e+00**		std	3.90e+01	2.75e+01	**8.87e+00**
T_{25}	median	2.70e+02	1.02e+02	**4.23e+01**	T_{50}	median	2.94e+02	1.05e+02	**4.63e+01**
	mean	2.59e+02	1.10e+02	**4.52e+01**		mean	2.69e+02	1.03e+02	**4.70e+01**
	std	5.73e+01	2.45e+01	**1.14e+01**		std	6.57e+01	2.91e+01	**8.24e+00**

Table S3.4. The median, mean, and standard deviation of the best fitness values obtained by MaTDE, EMaTO-MKT, and MaT-AMaLGaM over 30 independent runs on **S4** in WCCI2020 single-objective many-tasking benchmark suite. The entries highlighted in **bold** indicate that they are the best optimization results.

Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM	Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM
T_1	median	4.09E-06	**1.61E-24**	1.03e-04	T_{26}	median	1.01e+02	4.88e+01	**3.73e+01**
	mean	5.47E-06	**4.54E-10**	1.04e-04		mean	9.86e+01	3.21e+02	**6.00e+01**
	std	3.89E-06	**2.49E-09**	2.70e-05		std	4.27e+01	7.45e+02	**5.15e+01**
T_2	median	1.17E+02	4.80E+01	**3.62e+01**	T_{27}	median	2.72e+00	**3.61e-13**	2.90e-03
	mean	1.21E+02	1.47E+02	**4.37e+01**		mean	2.66e+00	**5.85e-05**	2.91e-03
	std	4.79E+01	2.56E+02	**2.73e+01**		std	4.32e-01	**3.20e-04**	3.91e-04
T_3	median	2.50E+00	**3.74E-13**	2.98e-03	T_{28}	median	6.22e-06	**1.52e-24**	1.01e-04
	mean	2.60E+00	**3.79E-13**	2.90e-03		mean	8.09e-06	**2.06e-21**	1.03e-04
	std	3.83E-01	**4.93E-14**	3.38e-04		std	6.21e-06	**1.13e-20**	2.65e-05
T_4	median	6.52E-06	**1.68E-24**	1.01e-04	T_{29}	median	3.22e+02	1.32e+02	**4.11e+01**
	mean	6.94E-06	**1.29E-09**	1.01e-04		mean	3.10e+02	7.87e+02	**6.82e+01**
	std	3.89E-06	**7.00E-09**	2.68e-05		std	1.51e+02	1.75e+03	**5.29e+01**
T_5	median	1.60E+02	4.86E+01	**3.69e+01**	T_{30}	median	2.55e+00	**3.93e-13**	2.81e-03
	mean	1.77E+02	1.33E+02	**5.34e+01**		mean	2.59e+00	**8.56e-10**	2.80e-03
	std	9.26E+01	3.08E+02	**6.04e+01**		std	3.60e-01	**3.62e-09**	3.46e-04
T_6	median	2.75E+00	**3.10E-13**	3.02e-03	T_{31}	median	6.42e-06	**1.44e-24**	9.31e-05
	mean	2.75E+00	**5.59E-08**	3.00e-03		mean	7.87e-06	**1.33e-24**	9.82e-05
	std	5.17E-01	**3.06E-07**	4.53e-04		std	8.46e-06	**4.19e-25**	3.25e-05
T_7	median	4.32E-06	**1.60E-24**	8.44e-05	T_{32}	median	6.14e+02	2.94e+02	**3.82e+01**
	mean	5.15E-06	**1.12E-09**	9.14e-05		mean	8.15e+02	4.82e+02	**6.96e+01**
	std	3.64E-06	**6.14E-09**	2.76e-05		std	4.71e+02	5.12e+02	**6.02e+01**
T_8	median	1.46E+02	4.87E+01	**3.77e+01**	T_{33}	median	2.68e+00	**3.86e-13**	2.69e-03
	mean	2.08E+02	1.56E+02	**4.51e+01**		mean	2.70e+00	**4.02e-13**	2.79e-03
	std	2.42E+02	3.28E+02	**2.20e+01**		std	4.59e-01	**1.08e-13**	3.99e-04
T_9	median	2.60E+00	**3.38E-13**	2.91e-03	T_{34}	median	5.85e-06	**1.11e-24**	9.72e-05
	mean	2.52E+00	**4.58E-02**	2.85e-03		mean	6.94e-06	**3.63e-19**	9.92e-05
	std	4.24E-01	**2.51E-01**	4.81e-04		std	3.69e-06	**1.88e-18**	2.66e-05
T_{10}	median	5.48E-06	**1.57E-24**	1.02e-04	T_{35}	median	7.02e+02	2.19e+02	**3.85e+01**
	mean	5.95E-06	**4.90E-23**	1.03e-04		mean	8.48e+02	1.04e+03	**1.40e+02**
	std	3.41E-06	**2.60E-22**	2.97e-05		std	5.88e+02	1.29e+03	**2.14e+02**
T_{11}	median	1.22E+02	4.83E+01	**3.74e+01**	T_{36}	median	2.37e+00	**3.85e-13**	2.86e-03
	mean	1.36E+02	1.97E+02	**5.15e+01**		mean	2.60e+00	**4.04e-13**	2.87e-03
	std	7.95E+01	6.64E+02	**2.96e+01**		std	6.58e-01	**1.91e-13**	4.25e-04
T_{12}	median	2.45E+00	**4.06E-13**	2.81e-03	T_{37}	median	4.00e-06	**1.12e-24**	1.00e-04
	mean	2.50E+00	**8.01E-07**	2.83e-03		mean	6.43e-06	**1.48e-24**	1.02e-04
	std	5.95E-01	**4.39E-06**	4.48e-04		std	5.96e-06	**1.99e-24**	2.75e-05
T_{13}	median	4.36E-06	**1.63E-24**	1.05e-04	T_{38}	median	1.22e+03	5.25e+02	**3.78e+01**
	mean	5.95E-06	**1.58E-24**	1.09e-04		mean	1.21e+03	1.34e+03	**9.43e+01**
	std	4.56E-06	**2.37E-25**	2.92e-05		std	5.12e+02	1.59e+03	**1.12e+02**
T_{14}	median	2.83E+02	1.36E+02	**3.69e+01**	T_{39}	median	2.32e+00	**4.06e-13**	2.95e-03
	mean	4.09E+02	5.73E+02	**5.79e+01**		mean	2.35e+00	**4.45e-13**	2.92e-03
	std	2.95E+02	9.60E+02	**4.96e+01**		std	5.77e-01	**1.90e-13**	4.17e-04
T_{15}	median	2.50E+00	**3.90E-13**	2.87e-03	T_{40}	median	6.38e-06	**1.41e-24**	1.02e-04
	mean	2.57E+00	**3.89E-13**	2.95e-03		mean	6.63e-06	**1.47e-24**	1.07e-04
	std	3.96E-01	**3.39E-14**	3.65e-04		std	3.67e-06	**2.36e-25**	3.30e-05
T_{16}	median	7.34E-06	**1.56E-24**	9.72e-05	T_{41}	median	2.50e+02	4.84e+01	**3.74e+01**
	mean	1.68E-05	**1.61E-24**	9.88e-05		mean	3.22e+02	3.02e+02	**9.08e+01**
	std	4.16E-05	**2.74E-25**	2.55e-05		std	2.47e+02	5.74e+02	**2.63e+02**
T_{17}	median	1.38E+02	1.31E+02	**3.78e+01**	T_{42}	median	2.79e+00	**3.88e-13**	2.86e-03
	mean	2.25E+02	5.22E+02	**1.19e+02**		mean	2.71e+00	**3.57e-04**	2.88e-03
	std	2.62E+02	8.70E+02	**2.20e+02**		std	4.54e-01	**1.95e-03**	3.61e-04
T_{18}	median	2.64E+00	**3.93E-13**	2.81e-03	T_{43}	median	8.33e-06	**1.63e-24**	1.05e-04
	mean	2.71E+00	**1.57E-10**	2.83e-03		mean	8.76e-06	**1.56e-17**	1.02e-04
	std	4.31E-01	**8.55E-10**	3.89e-04		std	4.58e-06	**8.56e-17**	2.91e-05
T_{19}	median	5.28E-06	**1.24E-24**	9.60e-05	T_{44}	median	1.99e+02	5.93e+01	**3.68e+01**
	mean	9.18E-06	**1.20E-24**	1.06e-04		mean	2.62e+02	2.15e+02	**5.18e+01**
	std	9.19E-06	**3.39E-25**	3.43e-05		std	2.23e+02	3.38e+02	**4.04e+01**
T_{20}	median	1.29E+02	4.85E+01	**3.64e+01**	T_{45}	median	2.60e+00	**3.76e-13**	2.86e-03
	mean	1.69E+02	4.42E+02	**4.55e+01**		mean	2.68e+00	**1.22e-07**	2.82e-03
	std	1.46E+02	1.23E+03	**2.49e+01**		std	3.68e-01	**6.66e-07**	4.37e-04
T_{21}	median	2.81E+00	**3.49E-13**	2.81e-03	T_{46}	median	4.90e-06	**1.40e-24**	1.05e-04
	mean	2.84E+00	**7.20E-07**	2.83e-03		mean	4.88e-06	**1.38e-24**	1.05e-04
	std	4.07E-01	**3.94E-06**	3.54e-04		std	2.35e-06	**2.53e-25**	2.93e-05
T_{22}	median	4.27E-06	**1.65E-24**	1.03e-04	T_{47}	median	1.60e+02	4.85e+01	**3.59e+01**
	mean	6.15E-06	**8.45E-22**	1.07e-04		mean	1.55e+02	1.33e+02	**4.55e+01**
	std	4.58E-06	**4.62E-21**	2.74e-05		std	8.33e+01	1.96e+02	**3.25e+01**
T_{23}	median	2.64E+02	8.26E+01	**4.48e+01**	T_{48}	median	2.53e+00	**3.77e-13**	2.73e-03
	mean	3.60E+02	5.10E+02	**8.47e+01**		mean	2.48e+00	**2.36e-09**	2.75e-03
	std	4.09E+02	8.36E+02	**7.29e+01**		std	3.75e-01	**1.29e-08**	5.29e-04
T_{24}	median	2.65E+00	**3.37E-13**	2.88e-03	T_{49}	median	6.18e-06	**1.81e-24**	9.56e-05
	mean	2.71E+00	**5.27E-13**	2.85e-03		mean	8.14e-06	**1.90e-24**	9.72e-05
	std	4.03E-01	**8.01E-13**	3.05e-04		std	6.32e-06	**6.70e-25**	2.53e-05
T_{25}	median	6.70E-06	**1.71E-24**	9.06e-05	T_{50}	median	7.39e+02	1.73e+02	**9.46e+01**
	mean	9.62E-06	**1.72E-24**	9.85e-05		mean	8.56e+02	5.04e+02	**1.31e+02**
	std	6.23E-06	**1.64E-25**	3.14e-05		std	5.93e+02	8.23e+02	**1.44e+02**

Table S3.5. The median, mean, and standard deviation of the best fitness values obtained by MaTDE, EMaTO-MKT, and MaT-AMaLGaM over 30 independent runs on **S5** in WCCI2020 single-objective many-tasking benchmark suite. The entries highlighted in **bold** indicate that they are the best optimization results.

Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM	Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM
T_1	median	3.40e+02	1.03e+02	**4.38e+01**	T_{26}	median	4.85e-03	1.30e-05	**0.00e+00**
	mean	3.25e+02	1.09e+02	**4.55e+01**		mean	7.72e-03	3.60e-04	**3.70e-17**
	std	8.04e+01	2.80e+01	**1.05e+01**		std	6.05e-03	1.80e-03	**6.73e-17**
T_2	median	2.93e-03	8.93e-06	**0.00e+00**	T_{27}	median	1.80e+01	2.22e+01	**2.12e+00**
	mean	7.12e-03	1.79e-05	**1.85e-17**		mean	1.75e+01	2.15e+01	**2.57e+00**
	std	6.59e-03	2.11e-05	**5.12e-17**		std	1.86e+00	6.50e+00	**1.77e+00**
T_3	median	1.52e+01	1.99e+01	**1.88e+00**	T_{28}	median	3.60e+02	1.07e+02	**4.97e+01**
	mean	1.53e+01	1.98e+01	**2.07e+00**		mean	3.53e+02	1.08e+02	**5.00e+01**
	std	1.53e+00	5.79e+00	**1.25e+00**		std	5.17e+01	2.68e+01	**1.06e+01**
T_4	median	3.56e+02	1.10e+02	**4.97e+01**	T_{29}	median	1.02e-02	8.45e-06	**0.00e+00**
	mean	3.43e+02	1.08e+02	**4.85e+01**		mean	1.01e-02	6.23e-05	**3.33e-17**
	std	6.47e+01	2.31e+01	**7.19e+00**		std	6.97e-03	1.33e-04	**5.94e-17**
T_5	median	2.70e-03	1.11e-05	**0.00e+00**	T_{30}	median	1.80e+01	2.14e+01	**2.04e+00**
	mean	5.45e-03	4.65e-04	**3.70e-17**		mean	1.75e+01	2.14e+01	**2.00e+00**
	std	5.43e-03	1.88e-03	**6.07e-17**		std	1.74e+00	5.68e+00	**1.34e+00**
T_6	median	1.46e+01	1.93e+01	**2.00e+00**	T_{31}	median	3.73e+02	9.57e+01	**4.38e+01**
	mean	1.46e+01	2.02e+01	**2.13e+00**		mean	3.66e+02	1.02e+02	**4.56e+01**
	std	1.67e+00	8.25e+00	**1.10e+00**		std	5.03e+01	2.62e+01	**1.26e+01**
T_7	median	3.45e+02	1.04e+02	**4.43e+01**	T_{32}	median	3.50e-03	7.82e-06	**0.00e+00**
	mean	3.33e+02	1.05e+02	**4.58e+01**		mean	5.89e-03	2.83e-04	**3.70e-17**
	std	7.10e+01	2.40e+01	**1.11e+01**		std	5.89e-03	1.35e-03	**6.07e-17**
T_8	median	9.50e-03	2.14e-05	**0.00e+00**	T_{33}	median	1.67e+01	2.03e+01	**1.64e+00**
	mean	1.01e-02	7.37e-04	**4.81e-17**		mean	1.66e+01	2.04e+01	**1.82e+00**
	std	6.60e-03	2.57e-03	**6.95e-17**		std	1.82e+00	5.91e+00	**1.39e+00**
T_9	median	1.65e+01	2.21e+01	**2.78e+00**	T_{34}	median	3.25e+02	9.60e+01	**4.78e+01**
	mean	1.64e+01	2.21e+01	**2.50e+00**		mean	3.14e+02	9.96e+01	**4.70e+01**
	std	1.77e+00	5.51e+00	**1.63e+00**		std	7.21e+01	1.64e+01	**8.14e+00**
T_{10}	median	3.80e+02	9.25e+01	**4.73e+01**	T_{35}	median	2.54e-03	5.27e-06	**0.00e+00**
	mean	3.74e+02	1.01e+02	**4.65e+01**		mean	5.62e-03	2.88e-04	**3.70e-17**
	std	4.87e+01	3.12e+01	**1.02e+01**		std	5.59e-03	1.41e-03	**6.73e-17**
T_{11}	median	3.45e-03	1.34e-05	**0.00e+00**	T_{36}	median	1.50e+01	1.91e+01	**2.06e+00**
	mean	5.89e-03	3.14e-05	**1.11e-17**		mean	1.51e+01	1.87e+01	**2.07e+00**
	std	5.84e-03	4.96e-05	**3.39e-17**		std	2.17e+00	6.37e+00	**1.46e+00**
T_{12}	median	1.59e+01	2.05e+01	**1.94e+00**	T_{37}	median	3.42e+02	9.60e+01	**4.88e+01**
	mean	1.59e+01	2.05e+01	**2.29e+00**		mean	3.29e+02	1.04e+02	**5.04e+01**
	std	1.74e+00	5.88e+00	**1.88e+00**		std	6.85e+01	3.25e+01	**1.13e+01**
T_{13}	median	3.57e+02	1.03e+02	**4.63e+01**	T_{38}	median	2.73e-03	1.29e-05	**0.00e+00**
	mean	3.61e+02	1.02e+02	**4.92e+01**		mean	3.82e-03	2.59e-05	**2.22e-17**
	std	2.97e+01	2.69e+01	**1.30e+01**		std	3.54e-03	2.97e-05	**4.52e-17**
T_{14}	median	2.76e-03	1.25e-05	**0.00e+00**	T_{39}	median	1.73e+01	2.25e+01	**1.81e+00**
	mean	5.87e-03	2.42e-05	**3.33e-17**		mean	1.76e+01	2.24e+01	**1.89e+00**
	std	8.08e-03	3.17e-05	**5.17e-17**		std	1.68e+00	6.99e+00	**1.55e+00**
T_{15}	median	1.56e+01	2.22e+01	**1.69e+00**	T_{40}	median	3.58e+02	1.03e+02	**4.48e+01**
	mean	1.61e+01	2.20e+01	**1.63e+00**		mean	3.48e+02	1.02e+02	**4.72e+01**
	std	2.10e+00	6.46e+00	**1.03e+00**		std	4.85e+01	2.24e+01	**1.20e+01**
T_{16}	median	3.61e+02	1.14e+02	**4.88e+01**	T_{41}	median	2.52e-03	8.12e-06	**0.00e+00**
	mean	3.60e+02	1.10e+02	**4.75e+01**		mean	7.45e-03	3.90e-04	**3.33e-17**
	std	4.57e+01	2.29e+01	**9.04e+00**		std	8.38e-03	1.83e-03	**5.17e-17**
T_{17}	median	4.04e-03	9.10e-06	**0.00e+00**	T_{42}	median	1.50e+01	2.19e+01	**1.59e+00**
	mean	7.30e-03	2.69e-04	**3.70e-17**		mean	1.50e+01	2.18e+01	**2.11e+00**
	std	6.91e-03	1.35e-03	**7.90e-17**		std	1.75e+00	6.63e+00	**1.54e+00**
T_{18}	median	1.60e+01	2.32e+01	**1.09E+00**	T_{43}	median	3.37e+02	1.09e+02	**4.97e+01**
	mean	1.60e+01	2.13e+01	**1.47E+00**		mean	3.21e+02	1.09e+02	**5.00e+01**
	std	1.51e+00	5.12e+00	**1.23E+00**		std	7.80e+01	2.48e+01	**1.28e+01**
T_{19}	median	3.43e+02	1.02e+02	**4.68E+01**	T_{44}	median	9.01e-03	8.45e-06	**0.00e+00**
	mean	3.23e+02	1.00e+02	**4.66E+01**		mean	1.02e-02	3.31e-05	**2.22e-17**
	std	6.08e+01	2.55e+01	**8.92E+00**		std	9.41e-03	9.23e-05	**4.52e-17**
T_{20}	median	5.31e-03	1.60e-05	**0.00E+00**	T_{45}	median	1.65e+01	2.02e+01	**1.61e+00**
	mean	8.24e-03	6.14e-04	**2.59E-17**		mean	1.63e+01	2.08e+01	**2.07e+00**
	std	7.45e-03	3.14e-03	**4.78E-17**		std	1.93e+00	5.66e+00	**1.39e+00**
T_{21}	median	1.56e+01	2.24e+01	**1.77E+00**	T_{46}	median	3.52e+02	1.10e+02	**4.78e+01**
	mean	1.59e+01	2.28e+01	**2.17E+00**		mean	3.35e+02	1.11e+02	**4.74e+01**
	std	2.10e+00	5.38e+00	**1.44E+00**		std	6.96e+01	2.28e+01	**6.40e+00**
T_{22}	median	3.61e+02	1.05e+02	**4.83E+01**	T_{47}	median	1.05e-02	1.07e-05	**0.00e+00**
	mean	3.49e+02	1.07e+02	**4.94E+01**		mean	1.19e-02	2.82e-05	**2.96e-17**
	std	6.16e+01	2.84e+01	**8.14E+00**		std	8.95e-03	4.18e-05	**6.48e-17**
T_{23}	median	2.18e-03	1.86e-05	**0.00E+00**	T_{48}	median	1.56e+01	2.21e+01	**2.01e+00**
	mean	5.10e-03	4.46e-04	**2.59E-17**		mean	1.59e+01	2.19e+01	**1.85e+00**
	std	6.47e-03	2.25e-03	**4.78E-17**		std	1.33e+00	5.37e+00	**1.40e+00**
T_{24}	median	1.71e+01	2.19e+01	**2.21E+00**	T_{49}	median	3.65e+02	1.02e+02	**4.83e+01**
	mean	1.71e+01	2.05e+01	**2.28E+00**		mean	3.52e+02	1.02e+02	**5.03e+01**
	std	1.26e+00	5.42e+00	**1.80E+00**		std	5.96e+01	2.22e+01	**1.01e+01**
T_{25}	median	3.48e+02	9.55e+01	**4.78E+01**	T_{50}	median	1.55e-03	1.69e-05	**0.00e+00**
	mean	3.45e+02	1.02e+02	**4.61E+01**		mean	3.62e-03	4.12e-04	**2.96e-17**
	std	6.11e+01	2.85e+01	**8.93E+00**		std	3.97e-03	1.80e-03	**4.99e-17**

Table S3.6. The median, mean, and standard deviation of the best fitness values obtained by MaTDE, EMaTO-MKT, and MaT-AMaLGaM over 30 independent runs on **S6** in WCCI2020 single-objective many-tasking benchmark suite. The entries highlighted in **bold** indicate that they are the best optimization results.

Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM	Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM
T_1	median	1.13e+02	4.83e+01	**4.00e+01**	T_{26}	median	3.18e-03	2.14e-05	**4.48e-06**
	mean	2.22e+02	3.48e+02	**5.35e+01**		mean	6.73e-03	2.97e-04	**4.66e-06**
	std	2.50e+02	1.01e+03	**3.49e+01**		std	6.38e-03	1.41e-03	**1.22e-06**
T_2	median	4.00e-03	2.47e-05	**4.45e-06**	T_{27}	median	1.37e+04	7.09e+03	**9.71e+03**
	mean	7.03e-03	6.89e-05	**4.27e-06**		mean	1.37e+04	**7.06e+03**	9.70e+03
	std	6.17e-03	1.12e-04	**1.04e-06**		std	4.97e+02	**1.07e+03**	8.74e+02
T_3	median	1.40e+04	**7.28e+03**	9.39e+03	T_{28}	median	1.56e+02	**4.91e+01**	3.66e+01
	mean	1.40e+04	**7.18e+03**	9.50e+03		mean	1.65e+02	1.98e+02	**5.31e+01**
	std	4.27e+02	**9.49e+02**	6.64e+02		std	7.29e+01	2.54e+02	**4.39e+01**
T_4	median	1.60e+02	4.88e+01	**3.65e+01**	T_{29}	median	1.01e-02	1.46e-05	**4.42e-06**
	mean	2.08e+02	3.37e+02	**4.46e+01**		mean	1.01e-02	3.37e-05	**4.51e-06**
	std	2.15e+02	7.59e+02	**2.43e+01**		std	9.83e-03	4.03e-05	**1.52e-06**
T_5	median	2.55e-03	1.51e-05	**4.76e-06**	T_{30}	median	1.39e+04	**7.03e+03**	9.91e+03
	mean	5.24e-03	6.62e-05	**4.90e-06**		mean	1.39e+04	**7.20e+03**	9.80e+03
	std	5.80e-03	1.13e-04	**1.04e-06**		std	5.91e+02	**1.02e+03**	1.01e+03
T_6	median	1.39e+04	**6.94e+03**	9.63e+03	T_{31}	median	3.93e+02	1.25e+02	**3.89e+01**
	mean	1.39e+04	**7.14e+03**	9.55e+03		mean	4.16e+02	4.56e+02	**6.41e+01**
	std	4.90e+02	**9.55e+02**	1.02e+03		std	2.36e+02	1.20e+03	**6.25e+01**
T_7	median	1.02e+02	4.85e+01	**3.68e+01**	T_{32}	median	1.22e-02	1.14e-05	**4.52e-06**
	mean	1.26e+02	1.55e+02	**4.05e+01**		mean	1.29e-02	3.26e-05	**4.49e-06**
	std	9.54e+01	2.92e+02	**1.59e+01**		std	7.78e-03	5.58e-05	**1.18e-06**
T_8	median	2.21e-03	3.21e-05	**4.88e-06**	T_{33}	median	1.38e+04	**7.05e+03**	9.86e+03
	mean	3.78e-03	5.31e-05	**4.79e-06**		mean	1.36e+04	**7.18e+03**	9.86e+03
	std	3.68e-03	6.97e-05	**1.24e-06**		std	5.80e+02	**1.01e+03**	8.67e+02
T_9	median	1.40e+04	**7.58e+03**	1.00e+04	T_{34}	median	9.92e+01	4.90e+01	**3.70e+01**
	mean	1.40e+04	**7.38e+03**	1.00e+04		mean	1.21e+02	1.89e+02	**8.39e+01**
	std	4.10e+02	**9.40e+02**	1.07e+03		std	7.26e+01	3.98e+02	**1.80e+02**
T_{10}	median	2.64e+02	1.33e+02	**3.79e+01**	T_{35}	median	2.95e-03	4.09e-05	**4.54E-06**
	mean	5.18e+02	3.05e+02	**6.39e+01**		mean	8.27e-03	3.55e-04	**4.43E-06**
	std	5.23e+02	3.41e+02	**6.10e+01**		std	8.55e-03	1.36e-03	**1.30E-06**
T_{11}	median	7.88e-03	2.36e-05	**4.55e-06**	T_{36}	median	1.39e+04	**7.40e+03**	1.00E+04
	mean	7.73e-03	3.24e-04	**4.51e-06**		mean	1.40e+04	**7.41e+03**	9.87E+03
	std	5.77e-03	1.36e-03	**1.10e-06**		std	3.70e+02	**8.87e+02**	1.06E+03
T_{12}	median	1.41e+04	**7.34e+03**	9.64e+03	T_{37}	median	1.64e+02	4.90e+01	**3.83E+01**
	mean	1.41e+04	**7.34e+03**	9.64e+03		mean	1.76e+02	2.28e+02	**7.28E+01**
	std	3.35e+02	**8.80e+02**	1.03e+03		std	8.38e+01	4.21e+02	**6.16E+01**
T_{13}	median	6.89e+01	4.91e+01	**3.76e+01**	T_{38}	median	3.20e-03	1.85e-05	**4.52E-06**
	mean	8.02e+01	1.87e+02	**5.04e+01**		mean	6.83e-03	9.42e-04	**2.51E-04**
	std	3.47e+01	3.38e+02	**2.90e+01**		std	8.39e-03	3.58e-03	**1.35E-03**
T_{14}	median	2.86e-03	2.37e-05	**4.57e-06**	T_{39}	median	1.41e+04	**7.39e+03**	9.55E+03
	mean	6.90e-03	9.03e-05	**4.51e-06**		mean	1.40e+04	**7.38e+03**	9.57E+03
	std	8.49e-03	1.44e-04	**1.19e-06**		std	3.57e+02	**1.13e+03**	9.37E+02
T_{15}	median	1.41e+04	**7.13e+03**	9.80e+03	T_{40}	median	7.98e+02	8.37e+01	**3.95E+01**
	mean	1.41e+04	**7.24e+03**	9.81e+03		mean	7.87e+02	5.01e+02	**9.09E+01**
	std	4.35e+02	**8.30e+02**	9.85e+02		std	4.94e+02	9.43e+02	**9.77E+01**
T_{16}	median	4.81e+02	4.92e+01	**3.75e+01**	T_{41}	median	4.62e-03	7.57e-06	**4.29E-06**
	mean	5.94e+02	4.45e+02	**7.05e+01**		mean	8.72e-03	9.26e-05	**4.54E-06**
	std	4.58e+02	1.09e+03	**1.26e+02**		std	7.43e-03	2.18e-04	**1.09E-06**
T_{17}	median	1.08e-02	2.04e-05	**4.48e-06**	T_{42}	median	1.38e+04	**7.68e+03**	9.86E+03
	mean	1.02e-02	8.68e-05	**4.51e-06**		mean	1.38e+04	**7.52e+03**	9.87E+03
	std	7.58e-03	2.78e-04	**1.43e-06**		std	4.37e+02	**9.06e+02**	8.23E+02
T_{18}	median	1.42e+04	**7.45e+03**	9.66e+03	T_{43}	median	7.73e+02	7.35e+01	**3.91E+01**
	mean	1.41e+04	**7.57e+03**	9.66e+03		mean	8.69e+02	3.96e+02	**1.27E+02**
	std	3.18e+02	**8.91e+02**	1.09e+03		std	6.45e+02	7.02e+02	**2.54E+02**
T_{19}	median	1.84e+02	4.88e+01	**3.71e+01**	T_{44}	median	3.17e-03	1.48e-05	**4.37E-06**
	mean	1.86e+02	2.28e+02	**4.48e+01**		mean	7.35e-03	2.56e-05	**4.44E-06**
	std	9.55e+01	8.44e+02	**2.42e+01**		std	7.50e-03	3.25e-05	**1.37E-06**
T_{20}	median	3.51e-03	1.67e-05	**4.75e-06**	T_{45}	median	1.39e+04	**7.15e+03**	9.57E+03
	mean	6.43e-03	8.99e-05	**4.72e-06**		mean	1.38e+04	**7.33e+03**	9.64E+03
	std	5.63e-03	2.75e-04	**1.16e-06**		std	4.09e+02	**7.04e+02**	9.20E+02
T_{21}	median	1.41e+04	**7.18e+03**	9.63e+03	T_{46}	median	2.00e+03	6.35e+02	**4.43E+01**
	mean	1.40e+04	**7.29e+03**	9.66e+03		mean	1.98e+03	1.45e+03	**1.48E+02**
	std	4.23e+02	**7.09e+02**	9.06e+02		std	7.45e+02	1.64e+03	**1.80E+02**
T_{22}	median	6.68e+02	1.36e+02	**3.79e+01**	T_{47}	median	5.94e-03	1.83e-05	**4.64E-06**
	mean	7.06e+02	8.04e+02	**5.33e+01**		mean	8.27e-03	4.18e-05	**4.66E-06**
	std	4.24e+02	1.80e+03	**3.49e+01**		std	6.98e-03	5.39e-05	**1.29E-06**
T_{23}	median	1.13e-02	1.14e-05	**4.56e-06**	T_{48}	median	1.42e+04	**7.45e+03**	9.93E+03
	mean	9.99e-03	5.82e-05	**4.50e-06**		mean	1.40e+04	**7.47e+03**	9.87E+03
	std	6.85e-03	1.47e-04	**1.18e-06**		std	5.24e+02	**8.33e+02**	9.12E+02
T_{24}	median	1.41e+04	**7.24e+03**	9.61e+03	T_{49}	median	1.85e+02	4.90e+01	**3.87E+01**
	mean	1.41e+04	**7.17e+03**	9.66e+03		mean	2.81e+02	2.77e+02	**8.12E+01**
	std	3.91e+02	**1.03e+03**	7.70e+02		std	3.06e+02	7.24e+02	**7.36E+01**
T_{25}	median	2.07e+02	4.91e+01	**3.77e+01**	T_{50}	median	2.05e-03	**1.23e-05**	**4.94E-06**
	mean	4.08e+02	3.83e+02	**6.02e+01**		mean	6.76e-03	**4.96e-05**	**4.78E-06**
	std	4.28e+02	1.05e+03	**7.56e+01**		std	9.40e-03	**1.02e-04**	**1.32E-06**

Table S3.7. The median, mean, and standard deviation of the best fitness values obtained by MaTDE, EMaTO-MKT, and MaT-AMaLGaM over 30 independent runs on **S7** in WCCI2020 single-objective many-tasking benchmark suite. The entries highlighted in **bold** indicate that they are the best optimization results.

Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM	Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM
T_1	median	2.94e+00	**1.23e-13**	**5.43e-13**	T_{26}	median	3.41e+02	9.95e+01	**4.18e+01**
	mean	2.89e+00	**1.48e-13**	**5.52e-13**		mean	3.43e+02	1.01e+02	**4.31e+01**
	std	5.77e-01	**6.21e-14**	**1.17e-13**		std	6.33e+01	2.21e+01	**1.05e+01**
T_2	median	3.32e+02	9.90e+01	**4.63e+01**	T_{27}	median	1.53e+01	1.84e+01	**1.95e+00**
	mean	3.21e+02	1.03e+02	**4.84e+01**		mean	1.51e+01	2.10e+01	**1.97e+00**
	std	6.44e+01	2.31e+01	**1.22e+01**		std	1.66e+00	6.81e+00	**1.29e+00**
T_3	median	1.64e+01	2.41e+01	**1.83e+00**	T_{28}	median	2.81e+00	**1.18e-13**	**5.60e-13**
	mean	1.71e+01	2.28e+01	**2.02e+00**		mean	2.72e+00	**1.41e-05**	**5.84e-13**
	std	2.33e+00	5.26e+00	**1.36e+00**		std	4.09e-01	**7.73e-05**	**1.30e-13**
T_4	median	2.74e+00	**1.32e-13**	**5.50e-13**	T_{29}	median	3.43e+02	9.70e+01	**4.73e+01**
	mean	2.74e+00	**2.46e-04**	**5.42e-13**		mean	3.44e+02	1.02e+02	**4.90e+01**
	std	3.45e-01	**1.35e-03**	**9.67e-14**		std	5.73e+01	2.33e+01	**1.06e+01**
T_5	median	3.57e+02	9.20e+01	**4.83e+01**	T_{30}	median	1.59e+01	2.32e+01	**2.06e+00**
	mean	3.57e+02	9.29e+01	**4.96e+01**		mean	1.61e+01	2.32e+01	**2.20e+00**
	std	4.41e+01	2.36e+01	**1.01e+01**		std	1.06e+00	5.22e+00	**1.33e+00**
T_6	median	1.56e+01	2.11e+01	**1.85e+00**	T_{31}	median	2.77e+00	**1.36e-13**	**5.05e-13**
	mean	1.53e+01	2.06e+01	**1.85e+00**		mean	2.74e+00	**3.44e-03**	**5.24e-13**
	std	1.82e+00	6.32e+00	**1.43e+00**		std	3.97e-01	**1.89e-02**	**1.09e-13**
T_7	median	2.60e+00	**1.29e-13**	**5.39e-13**	T_{32}	median	3.46e+02	1.12e+02	**4.97e+01**
	mean	2.59e+00	**2.70e-12**	**5.55e-13**		mean	3.38e+02	1.12e+02	**4.90e+01**
	std	4.66e-01	**1.40e-11**	**8.17e-14**		std	5.45e+01	2.81e+01	**1.15e+01**
T_8	median	3.58e+02	9.65e+01	**4.93e+01**	T_{33}	median	1.59e+01	2.12e+01	**1.20e+00**
	mean	3.43e+02	9.99e+01	**4.79e+01**		mean	1.62e+01	2.14e+01	**1.25e+00**
	std	6.43e+01	2.43e+01	**1.07e+01**		std	1.69e+00	6.16e+00	**7.81e-01**
T_9	median	1.57e+01	2.10e+01	**2.90e+00**	T_{34}	median	2.63e+00	**1.15e-13**	**5.55e-13**
	mean	1.61e+01	2.17e+01	**2.58e+00**		mean	2.56e+00	**1.20e-06**	**5.65e-13**
	std	1.63e+00	5.81e+00	**1.29e+00**		std	4.69e-01	**6.58e-06**	**1.41e-13**
T_{10}	median	2.55e+00	**1.23e-13**	**5.71e-13**	T_{35}	median	3.43e+02	9.85e+01	**4.93e+01**
	mean	2.54e+00	**2.00e-13**	**5.81e-13**		mean	3.37e+02	1.03e+02	**4.99e+01**
	std	4.79e-01	**3.67e-13**	**1.22e-13**		std	5.41e+01	2.49e+01	**9.75e+00**
T_{11}	median	3.64e+02	1.04e+02	**4.68e+01**	T_{36}	median	1.62e+01	2.21e+01	**2.05e+00**
	mean	3.32e+02	1.03e+02	**4.80e+01**		mean	1.62e+01	2.21e+01	**2.29e+00**
	std	9.18e+01	2.73e+01	**7.56e+00**		std	1.76e+00	4.98e+00	**1.65e+00**
T_{12}	median	1.64e+01	2.08e+01	**2.26e+00**	T_{37}	median	2.48e+00	**1.32e-13**	**5.34e-13**
	mean	1.61e+01	2.09e+01	**2.29e+00**		mean	2.53e+00	**5.47e-13**	**5.38e-13**
	std	2.11e+00	4.66e+00	**1.07e+00**		std	4.56e-01	**2.25e-12**	**9.97e-14**
T_{13}	median	2.60e+00	**1.18e-13**	**5.60e-13**	T_{38}	median	3.74e+02	9.75e+01	**4.68e+01**
	mean	2.60e+00	**1.26e-13**	**5.36e-13**		mean	3.60e+02	1.04e+02	**4.81e+01**
	std	3.27e-01	**2.80e-14**	**8.98e-14**		std	5.23e+01	2.43e+01	**8.13e+00**
T_{14}	median	3.40e+02	9.46e+01	**4.68e+01**	T_{39}	median	1.64e+01	1.99e+01	**1.52e+00**
	mean	3.35e+02	1.03e+02	**4.72e+01**		mean	1.62e+01	2.05e+01	**1.76e+00**
	std	5.62e+01	2.67e+01	**9.60e+00**		std	1.84e+00	4.87e+00	**1.57e+00**
T_{15}	median	1.68e+01	2.19e+01	**1.98e+00**	T_{40}	median	2.55e+00	**1.31e-13**	**5.44e-13**
	mean	1.71e+01	2.32e+01	**2.72e+00**		mean	2.62e+00	**1.73e-13**	**5.56e-13**
	std	2.05e+00	6.08e+00	**2.13e+00**		std	5.03e-01	**9.94e-14**	**1.14e-13**
T_{16}	median	2.72e+00	**1.23e-13**	**5.55e-13**	T_{41}	median	3.59e+02	9.20e+01	**4.68e+01**
	mean	2.67e+00	**1.40e-13**	**5.58e-13**		mean	3.49e+02	1.01e+02	**4.71e+01**
	std	4.63e-01	**5.10e-14**	**1.01e-13**		std	7.00e+01	3.23e+01	**9.59e+00**
T_{17}	median	3.55e+02	1.16e+02	**4.78e+01**	T_{42}	median	1.73e+01	2.19e+01	**1.60e+00**
	mean	3.32e+02	1.18e+02	**4.58e+01**		mean	1.73e+01	2.11e+01	**1.68e+00**
	std	5.56e+01	2.67e+01	**1.04e+01**		std	1.85e+00	6.35e+00	**1.23e+00**
T_{18}	median	1.60e+01	2.16e+01	**2.23e+00**	T_{43}	median	2.60e+00	**1.31e-13**	**5.66e-13**
	mean	1.65e+01	2.25e+01	**2.27e+00**		mean	2.53e+00	**2.48e-11**	**5.57e-13**
	std	1.17e+00	6.58e+00	**1.74e+00**		std	3.97e-01	**1.35e-10**	**9.20e-14**
T_{19}	median	2.70e+00	**1.29e-13**	**5.18e-13**	T_{44}	median	3.85e+02	1.02e+02	**4.93e+01**
	mean	2.78e+00	**1.50e-13**	**5.37e-13**		mean	3.54e+02	1.05e+02	**4.86e+01**
	std	4.11e-01	**6.83e-14**	**1.23e-13**		std	7.25e+01	2.71e+01	**1.02e+01**
T_{20}	median	3.70e+02	1.07e+02	**4.53e+01**	T_{45}	median	1.59e+01	2.12e+01	**2.09e+00**
	mean	3.45e+02	1.10e+02	**4.61e+01**		mean	1.57e+01	2.09e+01	**2.14e+00**
	std	8.59e+01	3.29e+01	**9.90e+00**		std	1.69e+00	6.27e+00	**1.43e+00**
T_{21}	median	1.52e+01	2.21e+01	**2.41e+00**	T_{46}	median	2.58e+00	**1.29e-13**	**5.27e-13**
	mean	1.49e+01	2.31e+01	**2.21e+00**		mean	2.64e+00	**1.36e-13**	**5.40e-13**
	std	1.58e+00	5.70e+00	**1.47e+00**		std	4.53e-01	**2.69e-14**	**1.06e-13**
T_{22}	median	2.84e+00	**1.29e-13**	**5.28e-13**	T_{47}	median	3.66e+02	1.01e+02	**4.83e+01**
	mean	2.81e+00	**1.33e-13**	**5.41e-13**		mean	3.61e+02	1.02e+02	**4.77e+01**
	std	4.92e-01	**1.95e-14**	**9.01e-14**		std	4.60e+01	2.68e+01	**8.93e+00**
T_{23}	median	3.38e+02	1.04e+02	**5.27e+01**	T_{48}	median	1.46e+01	2.15e+01	**1.55e+00**
	mean	3.35e+02	1.07e+02	**5.26e+01**		mean	1.51e+01	2.31e+01	**1.71e+00**
	std	3.62e+01	2.87e+01	**1.18e+01**		std	1.55e+00	6.31e+00	**1.22e+00**
T_{24}	median	1.66e+01	2.20e+01	**1.62e+00**	T_{49}	median	2.55e+00	**1.29e-13**	**5.09e-13**
	mean	1.67e+01	2.23e+01	**1.95e+00**		mean	2.64e+00	**1.48e-13**	**5.26e-13**
	std	1.50e+00	5.89e+00	**1.41e+00**		std	3.53e-01	**5.60e-14**	**8.44e-14**
T_{25}	median	2.75e+00	**1.18e-13**	**5.75e-13**	T_{50}	median	3.56e+02	1.02e+02	**4.58e+01**
	mean	2.73e+00	**1.23e-13**	**5.58e-13**		mean	3.44e+02	1.04e+02	**4.64e+01**
	std	3.46e-01	**2.90e-14**	**7.87e-14**		std	5.92e+01	2.00e+01	**1.12e+01**

Table S3.8. The median, mean, and standard deviation of the best fitness values obtained by MaTDE, EMaTO-MKT, and MaT-AMaLGaM over 30 independent runs on **S8** in WCCI2020 single-objective many-tasking benchmark suite. The entries highlighted in **bold** indicate that they are the best optimization results.

Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM	Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM
T_1	median	1.78e+02	4.86e+01	**3.56e+01**	T_{26}	median	8.13e+02	2.59e+02	**3.78e+01**
	mean	3.20e+02	5.36e+02	**4.71e+01**		mean	8.42e+02	1.14e+03	**1.23e+02**
	std	3.25e+02	1.43e+03	**3.53e+01**		std	6.00e+02	1.62e+03	**3.22e+02**
T_2	median	2.75e+00	**3.97e-13**	1.84e-03	T_{27}	median	2.79e+00	**4.61e-13**	1.83e-03
	mean	2.86e+00	**1.33e+00**	1.96e-03		mean	2.68e+00	**6.61e-01**	1.98e-03
	std	4.28e-01	**5.06e+00**	5.26e-04		std	4.59e-01	**3.62e+00**	4.86e-04
T_3	median	3.89e+02	1.10e+02	**4.43e+01**	T_{28}	median	3.92e+02	1.03e+02	**4.88e+01**
	mean	3.89e+02	1.09e+02	**4.80e+01**		mean	3.86e+02	1.06e+02	**4.91e+01**
	std	5.33e+01	2.25e+01	**1.20e+01**		std	5.58e+01	2.14e+01	**1.14e+01**
T_4	median	9.90e-03	1.50e-05	**1.41e-06**	T_{29}	median	5.21e-03	7.52e-06	**1.49e-06**
	mean	1.06e-02	3.30e-05	**1.63e-06**		mean	1.31e-02	2.28e-05	**1.73e-06**
	std	5.31e-03	4.93e-05	**6.79e-07**		std	1.33e-02	4.75e-05	**8.35e-07**
T_5	median	2.36e+01	2.39e+01	**3.54e+00**	T_{30}	median	2.53e+01	2.43e+01	**4.32e+00**
	mean	2.37e+01	2.37e+01	**3.69e+00**		mean	2.49e+01	2.51e+01	**4.62e+00**
	std	1.97e+00	5.38e+00	**1.79e+00**		std	1.80e+00	4.53e+00	**2.81e+00**
T_6	median	1.86e+02	4.85e+01	**3.59e+01**	T_{31}	median	6.76e+02	2.52e+02	**3.84e+01**
	mean	2.16e+02	2.99e+02	**3.66e+01**		mean	1.10e+03	1.12e+03	**1.19e+02**
	std	1.12e+02	8.54e+02	**3.78e+00**		std	7.59e+02	1.64e+03	**1.53e+02**
T_7	median	2.53e+00	**4.02e-13**	1.86e-03	T_{32}	median	2.68e+00	**4.68e-13**	1.84e-03
	mean	2.53e+00	**6.62e-01**	1.97e-03		mean	2.82e+00	**6.66e-01**	1.96e-03
	std	4.68e-01	**3.63e+00**	5.00e-04		std	5.40e-01	**3.65e+00**	6.10e-04
T_8	median	3.86e+02	1.02e+02	**4.68e+01**	T_{33}	median	3.84e+02	9.95e+01	**4.58e+01**
	mean	3.63e+02	1.05e+02	**4.76e+01**		mean	3.77e+02	1.05e+02	**4.58e+01**
	std	7.60e+01	2.80e+01	**1.18e+01**		std	4.56e+01	3.10e+01	**8.69e+00**
T_9	median	5.82e-03	7.86e-06	**1.51e-06**	T_{34}	median	4.54e-03	1.63e-05	**1.55e-06**
	mean	9.47e-03	4.82e-05	**1.77e-06**		mean	6.77e-03	3.69e-05	**1.85e-06**
	std	7.74e-03	1.02e-04	**1.24e-06**		std	5.73e-03	6.31e-05	**1.05e-06**
T_{10}	median	2.62e+01	2.54e+01	**5.53e+00**	T_{35}	median	2.42e+01	2.20e+01	**4.11e+00**
	mean	2.62e+01	2.33e+01	**5.45e+00**		mean	2.42e+01	2.14e+01	**4.24e+00**
	std	1.23e+00	6.29e+00	**2.31e+00**		std	2.04e+00	5.98e+00	**2.28e+00**
T_{11}	median	1.17e+02	4.83e+01	**3.49e+01**	T_{36}	median	9.19e+02	1.86e+02	**3.52e+01**
	mean	3.19e+02	3.85e+02	**3.64e+01**		mean	8.57e+02	1.05e+03	**6.89e+01**
	std	5.37e+02	1.07e+03	**7.76e+00**		std	5.60e+02	1.59e+03	**1.10e+02**
T_{12}	median	2.63e+00	**4.18e-13**	1.80e-03	T_{37}	median	2.70e+00	**4.27e-13**	1.78e-03
	mean	2.71e+00	**4.62e-13**	1.93e-03		mean	2.72e+00	**2.00e+00**	1.97e-03
	std	6.93e-01	**2.15e-13**	4.00e-04		std	4.54e-01	**6.10e+00**	5.71e-04
T_{13}	median	3.85e+02	9.80e+01	**4.88e+01**	T_{38}	median	3.88e+02	9.46e+01	**4.93e+01**
	mean	3.66e+02	9.75e+01	**5.01e+01**		mean	3.83e+02	9.82e+01	**4.83e+01**
	std	6.89e+01	1.92e+01	**1.42e+01**		std	5.45e+01	2.63e+01	**1.16e+01**
T_{14}	median	3.98e-03	7.76e-06	**1.45e-06**	T_{39}	median	7.19e-03	1.44e-05	**1.58e-06**
	mean	7.12e-03	2.68e-04	**1.77e-06**		mean	9.56e-03	1.03e-04	**1.88e-06**
	std	6.05e-03	1.35e-03	**1.17e-06**		std	6.94e-03	2.56e-04	**1.01e-06**
T_{15}	median	2.67e+01	2.52e+01	**4.95e+00**	T_{40}	median	2.42e+01	2.29e+01	**3.89e+00**
	mean	2.63e+01	2.45e+01	**4.76e+00**		mean	2.39e+01	2.29e+01	**4.12e+00**
	std	2.42e+00	5.70e+00	**2.09e+00**		std	2.26e+00	6.11e+00	**2.26e+00**
T_{16}	median	3.25e+02	1.21e+02	**3.81e+01**	T_{41}	median	7.41e+02	8.30e+01	**4.20e+01**
	mean	3.40e+02	2.29e+02	**8.20e+01**		mean	8.56e+02	4.31e+02	**2.53e+02**
	std	7.77e+01	3.72e+02	**1.06e+02**		std	7.00e+02	8.65e+02	**4.98e+02**
T_{17}	median	2.68e+00	**4.54e-13**	1.89e-03	T_{42}	median	2.51e+00	**5.00e-13**	1.88e-03
	mean	2.80e+00	**6.65e-01**	1.96e-03		mean	2.65e+00	**6.60e-01**	1.98e-03
	std	6.88e-01	**3.64e+00**	4.52e-04		std	4.19e-01	**3.61e+00**	5.41e-04
T_{18}	median	4.17e+02	1.04e+02	**4.83e+01**	T_{43}	median	4.20e+02	1.06e+02	**4.63e+01**
	mean	4.05e+02	1.07e+02	**4.92e+01**		mean	4.04e+02	1.02e+02	**4.80e+01**
	std	5.69e+01	2.45e+01	**1.26e+01**		std	5.61e+01	2.27e+01	**1.26e+01**
T_{19}	median	1.51e-02	5.95e-06	**1.45e-06**	T_{44}	median	7.15e-03	1.69e-05	**1.64e-06**
	mean	1.80e-02	3.53e-04	**3.30e-04**		mean	9.89e-03	6.63e-04	**4.95e-04**
	std	6.74e-03	1.80e-03	**1.80e-03**		std	7.52e-03	2.22e-03	**1.88e-03**
T_{20}	median	2.55e+01	2.48e+01	**4.63e+00**	T_{45}	median	2.33e+01	2.36e+01	**3.35e+00**
	mean	2.53e+01	2.47e+01	**4.57e+00**		mean	2.31e+01	2.27e+01	**3.59e+00**
	std	2.05e+00	4.75e+00	**1.83e+00**		std	2.37e+00	7.38e+00	**1.87e+00**
T_{21}	median	4.13e+03	4.79e+01	**3.74e+01**	T_{46}	median	1.88e+02	4.89e+01	**3.54e+01**
	mean	7.50e+03	5.45e+01	**3.73e+01**		mean	2.17e+02	2.14e+02	**4.49e+01**
	std	8.76e+03	2.85e+01	**8.50e+00**		std	1.39e+02	4.61e+02	**2.83e+01**
T_{22}	median	2.53e+00	**4.54e-13**	1.82e-03	T_{47}	median	2.72e+00	**4.45e-13**	1.77e-03
	mean	2.66e+00	**2.00e+00**	1.96e-03		mean	2.75e+00	**1.33e+00**	1.93e-03
	std	4.74e-01	**6.11e+00**	4.78e-04		std	4.74e-01	**5.07e+00**	5.14e-04
T_{23}	median	3.84e+02	1.03e+02	**4.68e+01**	T_{48}	median	3.89e+02	8.51e+01	**4.53e+01**
	mean	3.86e+02	1.06e+02	**5.01e+01**		mean	3.80e+02	9.74e+01	**4.63e+01**
	std	6.71e+01	2.86e+01	**1.14e+01**		std	6.20e+01	3.13e+01	**9.28e+00**
T_{24}	median	9.43e-03	7.05e-06	**1.43e-06**	T_{49}	median	6.71e-03	1.41e-05	**1.48e-06**
	mean	1.25e-02	5.23e-04	**2.48e-04**		mean	7.40e-03	3.52e-05	**1.76e-06**
	std	1.01e-02	2.70e-03	**1.35e-03**		std	3.80e-03	5.31e-05	**9.35e-07**
T_{25}	median	2.56e+01	2.17e+01	**4.64e+00**	T_{50}	median	2.28e+01	2.38e+01	**3.56e+00**
	mean	2.55e+01	2.33e+01	**4.36e+00**		mean	2.25e+01	2.44e+01	**3.71e+00**
	std	1.78e+00	6.73e+00	**2.22e+00**		std	2.44e+00	5.44e+00	**1.92e+00**

Table S3.9. The median, mean, and standard deviation of the best fitness values obtained by MaTDE, EMaTO-MKT, and MaT-AMaLGaM over 30 independent runs on **S9** in WCCI2020 single-objective many-tasking benchmark suite. The entries highlighted in **bold** indicate that they are the best optimization results.

Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM	Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM
T_1	median	3.50e+02	1.81e+02	**4.24e+01**	T_{26}	median	2.84e+00	**5.18e-13**	1.65e-03
	mean	3.46e+02	6.58e+02	**1.75e+02**		mean	3.03e+00	**2.67e+00**	1.65e-03
	std	5.45e+01	1.19e+03	**3.62e+02**		std	7.66e-01	**6.92e+00**	4.32e-04
T_2	median	2.84e+00	**4.25e-13**	1.68e-03	T_{27}	median	3.98e+02	9.95e+01	**4.97e+01**
	mean	2.79e+00	**6.65e-01**	1.74e-03		mean	3.93e+02	1.02e+02	**4.76e+01**
	std	4.26e-01	**3.64e+00**	3.91e-04		std	6.29e+01	2.36e+01	**9.78e+00**
T_3	median	4.02e+02	9.95e+01	**4.23e+01**	T_{28}	median	4.34e-03	1.14e-05	**1.12e-06**
	mean	3.89e+02	1.02e+02	**4.68e+01**		mean	9.12e-03	8.90e-05	**2.48e-04**
	std	5.38e+01	1.92e+01	**1.35e+01**		std	7.53e-03	1.89e-04	**1.35e-03**
T_4	median	4.33e-03	2.34e-05	**1.19e-06**	T_{29}	median	2.53e+01	2.22e+01	**4.46e+00**
	mean	6.28e-03	4.71e-05	**1.33e-06**		mean	2.52e+01	2.25e+01	**4.47e+00**
	std	6.28e-03	6.69e-05	**6.54e-07**		std	1.60e+00	6.88e+00	**2.40e+00**
T_5	median	2.36e+01	2.13e+01	**4.00e+00**	T_{30}	median	1.32e+04	**5.92e+03**	8.63e+03
	mean	2.39e+01	2.24e+01	**4.12e+00**		mean	1.31e+04	**5.99e+03**	8.40e+03
	std	2.18e+00	6.66e+00	**1.96e+00**		std	3.97e+02	**9.68e+02**	8.58e+02
T_6	median	1.30e+04	**5.71e+03**	8.26e+03	T_{31}	median	9.17e+02	1.78e+02	**3.82e+01**
	mean	1.29e+04	**5.79e+03**	8.21e+03		mean	9.66e+02	7.90e+02	**7.42e+01**
	std	4.17e+02	**9.48e+02**	9.08e+02		std	7.25e+02	1.13e+03	**7.37e+01**
T_7	median	2.68e+02	4.84e+01	**3.59e+01**	T_{32}	median	2.65e+00	**5.11e-13**	1.67e-03
	mean	5.42e+02	9.84e+01	**5.45e+01**		mean	2.77e+00	**6.71e-01**	1.71e-03
	std	9.25e+02	1.70e+02	**5.55e+01**		std	4.27e-01	**3.67e+00**	3.76e-04
T_8	median	2.81e+00	**4.31e-13**	1.63e-03	T_{33}	median	3.87e+02	9.81e+01	**4.88e+01**
	mean	2.80e+00	**6.67e-01**	1.67e-03		mean	3.82e+02	9.90e+01	**5.10e+01**
	std	6.43e-01	**3.65e+00**	3.28e-04		std	4.74e+01	2.34e+01	**1.18e+01**
T_9	median	3.90e+02	1.02e+02	**4.58e+01**	T_{34}	median	9.47e-03	1.55e-05	**1.29e-06**
	mean	3.86e+02	1.03e+02	**4.51e+01**		mean	9.64e-03	3.84e-05	**2.48e-04**
	std	7.63e+01	2.61e+01	**7.97e+00**		std	6.85e-03	6.35e-05	**1.35e-03**
T_{10}	median	3.76e-03	8.45e-06	**1.14e-06**	T_{35}	median	2.65e+01	2.58e+01	**4.47e+00**
	mean	5.12e-03	6.56e-05	**2.48e-04**		mean	2.60e+01	2.55e+01	**4.86e+00**
	std	5.20e-03	2.29e-04	**1.35e-03**		std	2.04e+00	5.41e+00	**2.17e+00**
T_{11}	median	2.56e+01	2.46e+01	**3.34e+00**	T_{36}	median	1.32e+04	**5.76e+03**	8.48e+03
	mean	2.51e+01	2.45e+01	**3.72e+00**		mean	1.31e+04	**5.87e+03**	8.32e+03
	std	2.40e+00	4.83e+00	**2.37e+00**		std	4.32e+02	**1.12e+03**	9.58e+02
T_{12}	median	1.29e+04	**5.57e+03**	7.87e+03	T_{37}	median	1.78e+02	4.90e+01	**3.60e+01**
	mean	1.28e+04	**5.61e+03**	7.67e+03		mean	2.05e+02	5.13e+02	**4.20e+01**
	std	3.61e+02	**1.28e+03**	1.22e+03		std	1.35e+02	1.27e+03	**2.00e+01**
T_{13}	median	1.98e+02	4.89e+01	**3.57e+01**	T_{38}	median	2.92e+00	**4.75e-13**	1.73e-03
	mean	3.03e+02	3.64e+02	**3.64e+01**		mean	2.93e+00	**2.66e+00**	1.69e-03
	std	2.63e+02	9.93e+02	**3.16e+00**		std	4.21e-01	**6.90e+00**	3.71e-04
T_{14}	median	2.58e+00	**4.24e-13**	1.75e-03	T_{39}	median	4.09e+02	9.46e+01	**4.78e+01**
	mean	2.63e+00	**6.64e-01**	1.70e-03		mean	3.95e+02	9.83e+01	**4.83e+01**
	std	3.40e-01	**3.63e+00**	3.86e-04		std	5.36e+01	2.16e+01	**7.91e+00**
T_{15}	median	4.03e+02	1.01e+02	**4.83e+01**	T_{40}	median	7.25e-03	1.12e-05	**1.11e-06**
	mean	3.87e+02	1.06e+02	**4.75e+01**		mean	9.26e-03	2.50e-05	**1.24e-06**
	std	4.68e+01	3.05e+01	**1.02e+01**		std	5.48e-03	3.69e-05	**5.46e-07**
T_{16}	median	4.59e-03	7.29e-06	**1.19e-06**	T_{41}	median	2.45e+01	2.49e+01	**2.68e+00**
	mean	9.16e-03	2.73e-04	**1.25e-06**		mean	2.48e+01	2.47e+01	**3.34e+00**
	std	8.04e-03	1.39e-03	**5.21e-07**		std	1.67e+00	6.54e+00	**2.05e+00**
T_{17}	median	2.48e+01	2.38e+01	**3.59e+00**	T_{42}	median	1.28e+04	**5.16e+03**	7.41e+03
	mean	2.46e+01	2.39e+01	**3.26e+00**		mean	1.27e+04	**4.85e+03**	7.33e+03
	std	2.25e+00	5.77e+00	**1.57e+00**		std	6.56e+02	**9.90e+02**	1.14e+03
T_{18}	median	1.31e+04	**5.88e+03**	8.43e+03	T_{43}	median	2.88e+02	4.91e+01	**3.64e+01**
	mean	1.30e+04	**5.83e+03**	8.23e+03		mean	3.36e+02	3.55e+02	**5.20e+01**
	std	4.24e+02	**9.50e+02**	9.51e+02		std	1.65e+02	8.17e+02	**4.48e+01**
T_{19}	median	2.53e+02	4.87e+01	**3.57e+01**	T_{44}	median	2.75e+00	**4.93e-13**	1.65e-03
	mean	2.65e+02	3.34e+02	**9.16e+01**		mean	2.82e+00	**3.34e+00**	1.69e-03
	std	1.17e+02	9.75e+02	**2.26e+02**		std	3.72e-01	**7.59e+00**	3.92e-04
T_{20}	median	2.75e+00	**5.52e-13**	1.69e-03	T_{45}	median	3.61e+02	9.60e+01	**4.48e+01**
	mean	2.77e+00	**4.66e+00**	1.70e-03		mean	3.43e+02	1.00e+02	**4.78e+01**
	std	6.34e-01	**8.59e+00**	3.31e-04		std	5.66e+01	2.29e+01	**9.13e+00**
T_{21}	median	3.63e+02	1.10e+02	**4.73e+01**	T_{46}	median	1.29e-02	1.24e-05	**1.24e-06**
	mean	3.68e+02	1.12e+02	**4.77e+01**		mean	1.25e-02	2.26e-05	**1.21e-06**
	std	5.90e+01	2.13e+01	**9.38e+00**		std	9.02e-03	2.64e-05	**4.83e-07**
T_{22}	median	3.01e-03	6.86e-06	**1.10e-06**	T_{47}	median	2.32e+01	2.53e+01	**2.44e+00**
	mean	6.14e-03	4.81e-05	**1.27e-06**		mean	2.32e+01	2.48e+01	**3.18e+00**
	std	6.53e-03	8.45e-05	**5.41e-07**		std	2.63e+00	5.79e+00	**2.09e+00**
T_{23}	median	2.59e+01	2.47e+01	**3.81e+00**	T_{48}	median	1.30e+04	**5.46e+03**	7.75e+03
	mean	2.62e+01	2.42e+01	**4.12e+00**		mean	1.31e+04	**5.63e+03**	7.94e+03
	std	2.15e+00	5.23e+00	**2.13e+00**		std	3.11e+02	**1.18e+03**	9.96e+02
T_{24}	median	1.28e+04	**5.50e+03**	7.97e+03	T_{49}	median	3.09e+02	4.87e+01	**3.65e+01**
	mean	1.27e+04	**5.60e+03**	7.83e+03		mean	4.58e+02	6.72e+01	**4.65e+01**
	std	6.86e+02	**1.06e+03**	1.34e+03		std	4.40e+02	6.10e+01	**2.53e+01**
T_{25}	median	8.10e+02	2.59e+02	**4.16e+01**	T_{50}	median	2.58e+00	**4.59e-13**	1.63e-03
	mean	1.32e+03	9.46e+02	**1.68e+02**		mean	2.67e+00	**6.68e-01**	1.66e-03
	std	1.08e+03	1.40e+03	**2.21e+02**		std	4.78e-01	**3.66e+00**	4.23e-04

Table S3.10. The median, mean, and standard deviation of the best fitness values obtained by MaTDE, EMaTO-MKT, and MaT-AMaLGaM over 30 independent runs on **S10** in WCCI2020 single-objective many-tasking benchmark suite. The entries highlighted in **bold** indicate that they are the best optimization results.

Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM	Task	Stats.	MaTDE	EMaTO-MKT	MaT-AMaLGaM
T_1	median	2.75e+00	**4.70e-13**	4.86e-10	T_{26}	median	2.55e+00	**5.36e-13**	5.49e-10
	mean	2.82e+00	**2.66e-05**	1.86e-08		mean	2.59e+00	**2.00e+00**	1.88e-08
	std	5.97e-01	**1.20e-04**	6.45e-08		std	5.22e-01	**6.11e+00**	6.54e-08
T_2	median	3.62e+02	1.04e+02	**4.83e+01**	T_{27}	median	3.89e+02	1.05e+02	**4.73e+01**
	mean	3.62e+02	1.06e+02	**5.01e+01**		mean	3.74e+02	1.05e+02	**4.81e+01**
	std	4.53e+01	2.74e+01	**1.13e+01**		std	4.90e+01	1.77e+01	**7.30e+00**
T_3	median	4.58e-03	5.75e-06	**0.00e+00**	T_{28}	median	9.05e-03	7.57e-06	**0.00e+00**
	mean	6.69e-03	2.90e-05	**2.47e-04**		mean	1.25e-02	3.19e-05	**1.39e-13**
	std	4.96e-03	6.15e-05	**1.35e-03**		std	9.43e-03	5.81e-05	**7.46e-13**
T_4	median	2.57e+01	2.41e+01	**3.28e+00**	T_{29}	median	2.58e+01	2.40e+01	**3.12e+00**
	mean	2.52e+01	2.38e+01	**3.74e+00**		mean	2.59e+01	2.40e+01	**3.06e+00**
	std	2.14e+00	6.41e+00	**2.25e+00**		std	3.44e+00	4.35e+00	**1.75e+00**
T_5	median	1.29e+04	**5.78e+03**	7.93e+03	T_{30}	median	1.27e+04	**5.48e+03**	7.55e+03
	mean	1.29e+04	**5.76e+03**	8.02e+03		mean	1.27e+04	**5.52e+03**	7.59e+03
	std	4.66e+02	**1.02e+03**	9.62e+02		std	5.83e+02	**1.20e+03**	1.10e+03
T_6	median	2.55e+00	**5.04e-13**	5.28e-10	T_{31}	median	2.58e+00	**4.57e-13**	5.44e-10
	mean	2.68e+00	**4.00e+00**	2.50e-08		mean	2.63e+00	**6.73e-01**	2.41e-08
	std	3.43e-01	**8.13e+00**	8.43e-08		std	4.85e-01	**3.69e+00**	8.04e-08
T_7	median	3.71e+02	1.04e+02	**4.68e+01**	T_{32}	median	3.63e+02	9.80e+01	**4.78e+01**
	mean	3.62e+02	1.05e+02	**4.64e+01**		mean	3.61e+02	9.89e+01	**4.80e+01**
	std	6.12e+01	2.99e+01	**8.91e+00**		std	5.69e+01	2.20e+01	**1.18e+01**
T_8	median	1.07e-02	1.28e-05	**0.00e+00**	T_{33}	median	3.40e-03	1.05e-05	**0.00e+00**
	mean	9.94e-03	5.13e-04	**3.10e-15**		mean	4.66e-03	6.16e-04	**2.40e-15**
	std	5.34e-03	2.71e-03	**1.35e-14**		std	2.96e-03	2.21e-03	**1.02e-14**
T_9	median	2.38e+01	2.42e+01	**3.36e+00**	T_{34}	median	2.59e+01	2.47e+01	**4.34e+00**
	mean	2.32e+01	2.40e+01	**3.61e+00**		mean	2.57e+01	2.50e+01	**4.15e+00**
	std	2.00e+00	5.92e+00	**2.12e+00**		std	2.14e+00	5.39e+00	**2.13e+00**
T_{10}	median	1.32e+04	**6.09e+03**	8.94e+03	T_{35}	median	1.29e+04	**6.20e+03**	8.27e+03
	mean	1.31e+04	**6.08e+03**	8.82e+03		mean	1.27e+04	**5.84e+03**	8.06e+03
	std	4.45e+02	**9.99e+02**	1.12e+03		std	6.78e+02	**1.10e+03**	8.72e+02
T_{11}	median	2.79e+00	**5.14e-13**	5.42e-10	T_{36}	median	2.55e+00	**4.59e-13**	5.36e-10
	mean	2.93e+00	**1.34e+00**	1.82e-08		mean	2.67e+00	**2.07e+00**	1.95e-08
	std	9.70e-01	**5.09e+00**	6.17e-08		std	4.63e-01	**6.11e+00**	6.90e-08
T_{12}	median	3.74e+02	1.06e+02	**4.63e+01**	T_{37}	median	3.64e+02	1.05e+02	**4.78e+01**
	mean	3.74e+02	1.12e+02	**4.74e+01**		mean	3.51e+02	1.01e+02	**4.79e+01**
	std	3.39e+01	2.74e+01	**8.67e+00**		std	5.00e+01	2.41e+01	**9.37e+00**
T_{13}	median	1.52e-02	6.77e-06	**0.00e+00**	T_{38}	median	6.23e-03	1.03e-05	**0.00e+00**
	mean	1.50e-02	1.28e-05	**6.47e-15**		mean	9.30e-03	5.09e-05	**5.17e-15**
	std	4.24e-03	1.63e-05	**2.56e-14**		std	7.56e-03	1.08e-04	**2.01e-14**
T_{14}	median	2.70e+01	2.50e+01	**2.97e+00**	T_{39}	median	2.26e+01	2.57e+01	**3.47e+00**
	mean	2.65e+01	2.44e+01	**3.57e+00**		mean	2.25e+01	2.47e+01	**3.52e+00**
	std	2.46e+00	7.47e+00	**2.20e+00**		std	2.79e+00	5.96e+00	**1.73e+00**
T_{15}	median	1.28e+04	**5.45e+03**	7.57e+03	T_{40}	median	1.31e+04	**5.50e+03**	8.36e+03
	mean	1.27e+04	**5.31e+03**	7.51e+03		mean	1.31e+04	**5.58e+03**	8.31e+03
	std	6.55e+02	**9.28e+02**	1.25e+03		std	4.35e+02	**8.81e+02**	1.04e+03
T_{16}	median	2.94e+00	**7.31e-13**	5.43e-10	T_{41}	median	2.32e+00	**5.28e-13**	5.23e-10
	mean	2.85e+00	**6.66e+00**	2.50e-08		mean	2.62e+00	**5.32e+00**	2.61e-08
	std	4.36e-01	**9.58e+00**	8.40e-08		std	7.23e-01	**8.97e+00**	8.74e-08
T_{17}	median	3.90e+02	1.05e+02	**4.78e+01**	T_{42}	median	3.67e+02	1.01e+02	**4.68e+01**
	mean	3.76e+02	1.05e+02	**4.86e+01**		mean	3.61e+02	1.05e+02	**4.57e+01**
	std	7.66e+01	2.74e+01	**9.38e+00**		std	6.69e+01	2.35e+01	**8.26e+00**
T_{18}	median	1.03e-02	7.64e-06	**0.00e+00**	T_{43}	median	1.21e-02	1.78e-05	**0.00e+00**
	mean	1.05e-02	2.76e-04	**5.89e-15**		mean	1.14e-02	3.84e-05	**2.49e-15**
	std	6.33e-03	1.36e-03	**2.32e-14**		std	6.76e-03	5.57e-05	**1.06e-14**
T_{19}	median	2.57e+01	2.50e+01	**3.17e+00**	T_{44}	median	2.53e+01	2.77e+01	**3.54e+00**
	mean	2.53e+01	2.55e+01	**3.49e+00**		mean	2.57e+01	2.62e+01	**4.20e+00**
	std	2.58e+00	5.30e+00	**1.84e+00**		std	1.67e+00	5.72e+00	**2.09e+00**
T_{20}	median	1.31e+04	**6.06e+03**	8.25e+03	T_{45}	median	1.32e+04	**5.86e+03**	8.35e+03
	mean	1.30e+04	**5.81e+03**	8.13e+03		mean	1.30e+04	**6.03e+03**	8.45e+03
	std	4.68e+02	**1.16e+03**	1.02e+03		std	6.08e+02	**1.30e+03**	1.28e+03
T_{21}	median	2.48e+00	**4.65e-13**	5.42e-10	T_{46}	median	2.79e+00	**4.79e-13**	5.43e-10
	mean	2.52e+00	**6.66e-01**	2.36e-08		mean	2.77e+00	**2.00e+00**	1.94e-08
	std	3.03e-01	**3.65e+00**	7.86e-08		std	4.94e-01	**6.11e+00**	6.65e-08
T_{22}	median	4.12e+02	9.71e+01	**4.33e+01**	T_{47}	median	3.78e+02	9.85e+01	**4.53e+01**
	mean	3.95e+02	1.05e+02	**4.38e+01**		mean	3.78e+02	1.02e+02	**4.78e+01**
	std	6.03e+01	2.43e+01	**7.58e+00**		std	3.75e+01	2.20e+01	**1.15e+01**
T_{23}	median	6.20e-03	5.36e-06	**0.00e+00**	T_{48}	median	5.33e-03	6.60e-06	**0.00e+00**
	mean	1.25e-02	1.80e-05	**3.21e-15**		mean	8.01e-03	1.71e-05	**2.47e-04**
	std	2.05e-02	2.76e-05	**1.33e-14**		std	5.60e-03	2.93e-05	**1.35e-03**
T_{24}	median	2.35e+01	2.39e+01	**3.03e+00**	T_{49}	median	2.64e+01	2.30e+01	**3.65e+00**
	mean	2.37e+01	2.26e+01	**3.15e+00**		mean	2.63e+01	2.33e+01	**4.14e+00**
	std	1.79e+00	6.60e+00	**1.97e+00**		std	1.70e+00	6.59e+00	**1.97e+00**
T_{25}	median	1.27e+04	**5.09e+03**	8.02e+03	T_{50}	median	1.25e+04	**5.45e+03**	8.09e+03
	mean	1.26e+04	**5.34e+03**	8.03e+03		mean	1.25e+04	**5.57e+03**	8.13e+03
	std	5.65e+02	**1.16e+03**	8.53e+02		std	5.32e+02	**1.29e+03**	9.82e+02