Table 1: Performance Results for Zakharov_5D Problem

Optimizer	Mean Final	Std Dev	Best	Worst	mov_5D Problem Mean Func	Success	Mean Time
	Value		Value	Value	Evals	Rate (%)	(s)
L-BFGS-	4.22e1	8.64e0	2.82e1	6.13e1	3309.5	0.0	0.061
Aggressive							
Adam-	2.23e-2	1.32e-2	4.59e-3	5.39e-2	2502.0	0.0	0.059
AMSGrad							
Adam-Robust	7.06e-2	7.45e-2	6.18e-3	2.91e-1	2502.0	0.0	0.059
Adam	2.82e-3	2.38e-3	2.65e-4	7.47e-3	2502.0	0.0	0.052
Adam-	8.64e-3	1.13e-2	9.76e-9	2.86e-2	1586.3	60.0	0.035
WeightDecay							
Trust Region-	2.28e3	8.27e2	6.92e2	3.84e3	3002.0	0.0	0.020
Standard							
Trust Region-	3.50e3	7.96e2	2.04e3	4.73e3	3002.0	0.0	0.020
Precise	0.0000				000=10	0.0	0.020
Trust Region-	3.28e3	6.15e2	2.05e3	4.46e3	3002.0	0.0	0.020
Conservative	3.2 000	0.130 2	2.0000	1, 1000	3002.0	0.0	0.020
Trust Region-	3.10e3	8.27e2	1.77e3	4.98e3	3002.0	0.0	0.020
Adaptive	0.1000	0.2102	1.1109	1.0000	9002.0	0.0	0.020
Trust Region-	5.65e1	1.12e2	6.02e-1	4.25e2	2415.8	0.0	0.016
Aggressive	0.0001	1.1202	0.020-1	4.2002	2410.0	0.0	0.010
L-BFGS-	1.94e-8	4.45e-8	7.85e-9	2.13e-7	1078.6	95.0	0.016
Limited	1.946-0	4.456-0	1.000-9	2.136-7	1076.0	90.0	0.010
L-BFGS-	9.32e-9	3.60e-10	8.60e-9	9.95e-9	634.6	100.0	0.013
MoreThuente	9.326-9	3.00e-10	8.00e-9	9.90e-9	054.0	100.0	0.013
GD	0.70- 0	0.70- 11	9.63e-9	0.07- 0	477 1	100.0	0.010
L-BFGS-	9.78e-9	9.76e-11		9.97e-9	477.1	100.0	0.012
	7.32e-9	2.98e-9	2.42e-10	9.99e-9	492.9	100.0	0.012
Conservative	1.50 0	1 50 0	250 10	T 00 0	005.0	100.0	0.000
QQN-	1.52e-9	1.59e-9	3.50e-12	5.23e-9	205.0	100.0	0.008
CubicQuadraticIn		0.17 0	0.01 1.4	0.01.0	100.0	100.0	0.000
QQN-	2.41e-9	3.17e-9	2.91e-14	9.91e-9	100.3	100.0	0.003
StrongWolfe				0.40		4000	
QQN-Bisection-	1.50e-9	1.97e-9	2.56e-15	6.16e-9	114.7	100.0	0.003
2							
QQN-Bisection-	1.12e-12	2.99e-12	5.59e-14	1.40e-11	118.0	100.0	0.002
1							
QQN-	2.83e-12	2.87e-12	2.45e-13	1.21e-11	138.0	100.0	0.002
GoldenSection							
GD-	7.62e-1	4.69e-1	9.24e-9	1.31e0	52.5	25.0	0.002
WeightDecay							
L-BFGS	2.69e1	2.46e1	2.58e-1	$8.10\mathrm{e}1$	93.0	0.0	0.002
Adam-Fast	9.66e0	1.31e0	7.78e0	1.15e1	34.8	0.0	0.001
GD-	6.97e1	1.64e1	4.83e1	1.09e2	18.5	0.0	0.001
AdaptiveMoment	um						
GD-Momentum	5.45e1	1.33e1	3.48e1	9.04e1	18.9	0.0	0.001
GD-Nesterov	5.05e0	2.73e0	1.42e0			0.0	0.001
		1.33e1 2.73e0		9.04e1 1.10e1	18.9 18.1		