

Table 1: Performance Results for NoisySphere\10Dnigma0.01Problem

Optimizer	Mean Final Value	Std Dev	Best Value	Worst Value	Mean Func Evals	Success Rate (%)	Mean Time (s)
GD-Momentum	$1.00 \times 10^1$	1.76	5.05	$1.23 \times 10^1$	17.3	10.0	0.006
L-BFGS	$2.84 \times 10^1$	$1.07 \times 10^1$	$1.12 \times 10^1$	$5.12 \times 10^1$	61.5	5.0	0.005
L-BFGS-Conservative	5.33	1.38	2.96	8.18	835.8	0.0	0.045
QQN-Bisection-1	8.30	1.77	3.20	$1.05 \times 10^1$	127.7	0.0	0.037
QQN-Backtracking	8.49	2.58	2.59	$1.13 \times 10^1$	254.3	0.0	0.015
QQN-StrongWolfe	9.34	1.35	6.81	$1.14 \times 10^1$	26.9	0.0	0.003
QQN-GoldenSection	9.40	1.57	3.86	$1.23 \times 10^1$	26.5	0.0	0.002
QQN-MoreThuente	9.45	$5.78 \times 10^{-1}$	8.36	$1.02 \times 10^1$	14.9	0.0	0.003
QQN-CubicQuadraticInterpolation	9.88	$7.88 \times 10^{-1}$	8.12	$1.18 \times 10^1$	26.0	0.0	0.006
Trust Region-Standard	9.92	$7.60 \times 10^{-1}$	8.76	$1.17 \times 10^1$	5.0	0.0	0.001
Trust Region-Conservative	9.99	$7.74 \times 10^{-1}$	8.78	$1.16 \times 10^1$	7.1	0.0	0.001
GD-WeightDecay	9.99	1.30	6.67	$1.20 \times 10^1$	15.9	0.0	0.005
Adam	$1.00 \times 10^1$	$8.06 \times 10^{-1}$	8.40	$1.18 \times 10^1$	30.6	0.0	0.006
L-BFGS-Aggressive	$1.01 \times 10^1$	$7.91 \times 10^{-1}$	8.41	$1.15 \times 10^1$	11.1	0.0	0.001
Adam-WeightDecay	$1.02 \times 10^1$	$7.97 \times 10^{-1}$	9.00	$1.16 \times 10^1$	28.8	0.0	0.005
Trust Region-Adaptive	$1.03 \times 10^1$	$7.89 \times 10^{-1}$	9.14	$1.19 \times 10^1$	5.0	0.0	0.001
GD	$1.03 \times 10^1$	$9.17 \times 10^{-1}$	8.51	$1.19 \times 10^1$	12.6	0.0	0.004
Adam-AMSGrad	$1.03 \times 10^1$	$8.26 \times 10^{-1}$	9.13	$1.19 \times 10^1$	30.6	0.0	0.006
GD-Nesterov	$1.05 \times 10^1$	1.21	7.41	$1.23 \times 10^1$	11.8	0.0	0.004
Adam-Fast	$1.09 \times 10^1$	1.61	6.81	$1.51 \times 10^1$	19.1	0.0	0.003