

Table 1: Performance Results for Rosenbrock\10DProblem

Optimizer	Mean Final Value	Std Dev	Best Value	Worst Value	Mean Func Evals	Success Rate (%)	Mean Time (s)
<b>GD</b>	$1.00 \times 10^1$	$2.46 \times 10^{-1}$	9.61	$1.06 \times 10^1$	46.8	100.0	0.001
Adam-Fast	$1.90 \times 10^1$	$1.37 \times 10^1$	$2.30 \times 10^{-1}$	$3.92 \times 10^1$	111.2	60.0	0.002
GD-WeightDecay	1.07	1.28	$1.85 \times 10^{-1}$	4.86	283.2	25.0	0.010
GD-Momentum	$2.59 \times 10^1$	$3.11 \times 10^1$	$5.08 \times 10^{-1}$	$7.49 \times 10^1$	170.3	20.0	0.005
L-BFGS	$7.97 \times 10^1$	$9.37 \times 10^1$	$3.02 \times 10^1$	$4.65 \times 10^2$	146.8	20.0	0.002
L-BFGS-Conservative	8.97	$7.63 \times 10^{-1}$	6.43	9.60	686.4	5.0	0.011
GD-Nesterov	1.21	$3.07 \times 10^{-2}$	1.15	1.26	335.0	0.0	0.011
QQN-Backtracking	4.63	1.89	$8.17 \times 10^{-1}$	7.60	690.0	0.0	0.022
QQN-StrongWolfe	4.96	2.67	$2.67 \times 10^{-3}$	9.13	566.4	0.0	0.018
QQN-Bisection-1	5.15	2.32	$5.57 \times 10^{-1}$	9.44	475.4	0.0	0.013
QQN-Bisection-2	7.10	$9.80 \times 10^{-1}$	4.29	8.38	602.8	0.0	0.015
QQN-GoldenSection	8.27	$9.75 \times 10^{-1}$	3.32	9.56	912.9	0.0	0.016
QQN-CubicQuadraticInterpolation	8.53	$4.54 \times 10^{-1}$	7.53	9.35	399.2	0.0	0.015
Adam-WeightDecay	$1.34 \times 10^2$	$2.94 \times 10^1$	$8.49 \times 10^1$	$1.98 \times 10^2$	502.0	0.0	0.012
QQN-MoreThuente	$3.19 \times 10^2$	$5.48 \times 10^1$	$2.39 \times 10^2$	$4.72 \times 10^2$	484.0	0.0	0.011
Adam-AMSGrad	$9.92 \times 10^2$	$1.33 \times 10^2$	$7.87 \times 10^2$	$1.21 \times 10^3$	502.0	0.0	0.012
Adam	$1.02 \times 10^3$	$1.37 \times 10^2$	$8.03 \times 10^2$	$1.27 \times 10^3$	502.0	0.0	0.011
L-BFGS-Aggressive	$1.14 \times 10^3$	$1.01 \times 10^3$	$5.83 \times 10^1$	$2.59 \times 10^3$	773.1	0.0	0.009
Trust Region-Standard	$1.99 \times 10^3$	$1.88 \times 10^2$	$1.63 \times 10^3$	$2.33 \times 10^3$	602.0	0.0	0.004
Trust Region-Adaptive	$2.11 \times 10^3$	$2.62 \times 10^2$	$1.62 \times 10^3$	$2.67 \times 10^3$	602.0	0.0	0.004
Trust Region-Conservative	$2.18 \times 10^3$	$2.53 \times 10^2$	$1.69 \times 10^3$	$2.67 \times 10^3$	602.0	0.0	0.004