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| n-D | | | | |
| Function | LB | UB | Ideal F | Ref |
| Sphere | -100/-10/-5.12 | 100/10/5.12 | 0 | [1][2]***[3]***[4][5][9][10][16][18][19][21][27][28][29][30] |
| Schwefel P2.22 | -10 | 10 | 0 | [1][9][10][18][19][21][28] [29][30] |
| Quadric | -100 | 100 | 0 | [1] |
| Rosenbrock | -10/-30/-2.048/-5 | 10/30/2.048/10 | 0 | [1][2][4][5][9][10][16][18][19][21][27][28][29][30] |
| Step | -100 | 100 | 0 | [1][9][10][19][21][27][28][29] |
| Quadric Noise | -1.28 | 1.28 | 0 | [1][9][10][18][19][21][27][28][29] |
| Schwefel P2.26 | -500/-65.536 | 500/65.536 | -418.9829\*D | [1][4][5][10][19][21][28] |
| Rastrigin | -5.12 | 5.12 | 0 | [1][2][4][5][9][10][16][18][19][21][27][28][29][30] |
| Noncontinuous Rastrigin | -5.12 | 5.12 | 0 | [1] |
| Ackley | -32/-30/-50/-32.768 | 32/30/50/32.768 | 0 | [1][2][3][4][5][9][10][16][18][19][21][27][28][29] |
| Griewank | -600 | 600 | 0 | [1][2][3][4][5][9][10][16][18][19][21][27][28][29][30] |
| Generalized Penalized 1 | -50 | 50 | 0 | [1][5][9][19][21][27][28][29] |
|  |  |  |  |  |
| Michalewicz | 0 | PI | -0.966D | [4][28] |
| Quartic | -1.28 | 1.28 | ? | [5] |
| Generalized Penalized 2 | -500/-50 | 500/50 | 0 | [5][19][21][28][29] |
| Fletcher | -PI | PI | ? | [5] |
| Schwefel P1.2 | -100/-10 | 100/10 | 0 | [9][10][19][21][28][30] |
| Schwefel P2.21 | -100/-10 | 100/10 | 0 | [9][10][19][21][27][28][29] |
| Alpine | -10/-100 | 10/100 | 0 | [9][10][28][30] |
| Zakharov | -5 | 10 | 0 | [9][29] |
| Cigar | -100/-10 | 100/10 | 0 | [10][28][29] |
| Levy | -10 | 10 | 0 | [10] |
| Schwefel | -100 | 100 | 0 | [16] |
| Sum Square | -10 | 10 | 0 | [18][28][30] |
| Sum Power | -1 | 1 | ? | [18] |
| Exponential | -10 | 10 | ? | [18] |
| Leon | -1.2 | 1.2 | 0 | [28] |
| Zettl | -5 | 5 | -0.00379 | [28] |
| Schwefel P1.12 | -100 | 100 | 0 | [29] |
| Powell | -4 | 5 | 0 | [29] |
| Tablet | -1 | 1 | 0 | [29] |
| Elliptic | -100 | 100 | 0 | [29] |
| Brown | -1 | 4 | 0 | [29] |
| Chung Reynolds | -100 | 100 | 0 | [29] |
| Powell sum | -1 | 1 | 0 | [29] |
| Csendes | -1 | 1 | 0 | [29] |
| Inverted Cosine Mixture | -1 | 1 | 0 | [29] |
| Salomon | -100 | 100 | 0 | [29] |
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| 2-D | | | | |
| Function | LB | UB | Ideal F | Ref |
| Shekel’s Foxholes | -65 | 65 | 1 | [9][19][21][28] |
| Rastrigin | -5 | 5 | 0.398 | [9] |
| GoldStein Price | -5/-2 | 5/2 | 3 | [9][19][21][28][29] |
| Drop wave | -5.12 | 5.12 | -1 | [9][29] |
| Schaffer | -100 | 100 | -1/0 | [9] [10] |
| Easom | -100 | 100 | -1 | [9][10][28] |
| Beale | -4.5 | 4.5 | 0 | [10][28] |
| Bohachevsky 1 | -100 | 100 | 0 | [10][29] |
| Bohachevsky 2 | -100 | 100 | 0 | [10][29] |
| Bohachevsky 3 | -50 | 50 | 0 | [10][29] |
| Shubert | -10 | 10 | -186.73 | [10][29] |
| Six-Hump Camel-Back | -5 | 5 | -1.0316 | [21][28] |
| Branin | -5 | 5 | 0.398 | [21][28] |
| Matyas | -10 | 10 | 0 | [28][29] |
| Booth | -10 | 10 | 0 | [28] |
| Leon | -1.2 | 1.2 | 0 | [29] |
| Bartels Conn | -500 | 500 | 1 | [29] |
| Bird | -2PI | 2PI | -106.764 | [29] |
| Schf6 | -100 | 100 | 0 | [2] |

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| 3-D | | | | |
| Function | LB | UB | Ideal F | Ref |
| Hartman 3 | 1 | 3 | -3.86 | [19][21][28][29] |
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| 4-D | | | | |
| Function | LB | UB | Ideal F | Ref |
| Kowalik | -5 | 5 | 0.0003075 | [9][19][21][28][29] |
| Shekel 5 | 0 | 10 | -10.1532 | [9][21][28] |
| Shekel 7 | 0 | 10 | -10.4029 | [9][28] |
| Shekel 10 | 0 | 10 | -10.5364 | [9][28] |
| Colville | -10 | 10 | 0 | [29] |
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| 6-D | | | | |
| Function | LB | UB | Ideal F | Ref |
| Hartman 6D | 0 | 1 | -3.32 | [19][28] |
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| 10-D | | | | |
| Function | LB | UB | Ideal F | Ref |
| Michalewitz | -100 | 100 | 0.966D | [10] |
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[1] Adaptive Particle Swarm Optimization

[2] A novel bee swarm optimization algorithm for numerical function optimization

[3] Chaos-enhanced accelerated particle swarm optimization

[4] Experimental Analysis of Bound Handling Techniques in Particle Swarm Optimization

[5] Biogeography-based optimisation with chaos

[6] Grey Wolf Optimizer(還沒)

[7] The Whale Optimization Algorithm(還沒)

[8] Hybrid Algorithm of Particle Swarm Optimization and Grey Wolf Optimizer for Improving Convergence Performance(還沒)

[9] Lévy Flight Trajectory-Based Whale Optimization Algorithm for Global Optimization

[10] Chaotic whale optimization algorithm

[11] 一种改进的鲸鱼优化算法(還沒)

[12] A hyper-heuristic for improving the initial population of whale optimization algorithm(還沒)

[13] An efficient double adaptive random spare reinforced whale optimization algorithm(還沒)

[14] An enhanced associative learning-based exploratory whale optimizer for global optimization(還沒)

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[26] Opposition based competitive grey wolf optimizer for EMG feature selection

[27] 一种离散鲸鱼算法及其应用

[28] I‑GWO and Ex‑GWO: improved algorithms of the Grey Wolf Optimizer to solve global optimization problems

[29] A novel enhanced whale optimization algorithm for global optimization

[30] Improved Whale Optimization Algorithm for Solving Constrained Optimization Problems

[31] Nature-inspired approach: An enhanced whale optimization algorithm for global optimization(還沒)