

Heuristic Algorithms

Achieved Results for Differential Evolution

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FES	5×10^3	5×10^4	5×10^5
Best	7.3844	1.5323	1.5323
Median	42.2771	47.0339	47.7737
Worst	37.3844	24.5235	24.5235
v	5577.5174	12105.4310	18027.8689
Mean	44.2701	48.5269	48.0500
std	19.3402	23.6464	22.7917

Table 1: Error Values Problem pg01 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	0.1752	0.0438	0.0438
Median	0.6620	0.6554	0.6554
Worst	0.9237	0.9237	0.9237
v	0.0000	0.0000	0.0000
Mean	0.6420	0.6362	0.6385
std	0.0895	0.1008	0.0936

Table 2: Error Values Problem pg02 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	1.0003	0.9978	0.9978
Median	0.9745	0.9590	0.9445
Worst	1.0007	1.0007	1.0007
v	25.4136	51.8037	82.7448
Mean	3.2944	2.8089	2.6131
std	6.4010	5.9951	5.3792

Table 3: Error Values Problem pg03 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	811.3856	728.3927	577.8440
Median	2894.4094	2957.5855	2876.5112
Worst	55117.3428	55117.3428	55117.3428
v	0.8197	1.3914	2.0859
Mean	2963.7607	2862.6765	2823.0601
std	1412.2750	1258.6293	1367.5077

Table 4: Error Values Problem pg04 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	992.2012	356.4336	553.2420
Median	1952.4004	1893.7007	1848.4052
Worst	12170.3422	12884.5126	13364.3995
v	16037.6991	30298.0392	44988.8562
Mean	2122.3808	1942.4414	1916.9435
std	1475.4649	1311.5200	1281.1334

Table 5: Error Values Problem pg05 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	4930.1321	4930.1321	4681.4106
Median	17811.3333	19862.7616	21589.5328
Worst	250302.3458	250302.3458	317406.5835
v	45825.8987	93016.8791	146715.7920
Mean	50688.2317	47348.4786	49449.6065
std	70032.5089	59790.1021	63227.4147

Table 6: Error Values Problem pg06 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	1.1813	0.0940	0.0033
Median	1598.7256	1598.7256	1602.3777
Worst	3637.9277	3796.2494	3796.2494
v	12129.8008	24218.1350	36022.3435
Mean	1713.9945	1706.5250	1688.3023
std	1065.8146	1030.9561	999.9720

Table 7: Error Values Problem pg07 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	0.0667	0.0240	0.0240
Median	0.0957	0.0958	0.0959
Worst	0.3080	0.3080	9.9636
v	239.5326	408.1552	667.6615
Mean	0.8665	0.6896	1.0696
std	4.0159	3.1642	5.0929

Table 8: Error Values Problem pg08 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	756.3859	5.5099	5.5099
Median	88139.6178	191715.2827	191715.2827
Worst	8951321.6278	8951321.6278	9857967.1608
v	6674.5181	14707.0551	22340.8408
Mean	1375285.8886	1393523.5467	1809201.2601
std	2667918.2708	2400102.1284	2847475.7549

Table 9: Error Values Problem pg09 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	13447.5686	13447.5686	13447.5686
Median	9087.5135	8869.9390	8869.9390
Worst	28737.2542	34552.1996	34552.1996
v	203167.5128	395324.1053	787478.7456
Mean	8508.9726	9157.3919	8952.2725
std	4072.8683	4275.2339	4381.2137

Table 10: Error Values Problem pg10 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	0.0980	0.0980	0.0069
Median	0.2124	0.1172	0.1373
Worst	2.6042	2.6042	2.7061
v	4.8771	7.6871	11.2768
Mean	0.2975	0.2348	0.2415
std	0.3024	0.2584	0.2709

Table 11: Error Values Problem pg11 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	0.0642	0.0000	0.0000
Median	0.2022	0.2052	0.1967
Worst	1.6196	1.5568	1.5568
v	2.3682	3.7967	5.3630
Mean	0.2027	0.2071	0.1989
std	0.0874	0.0929	0.0939

Table 12: Error Values Problem pg12 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	0.6541	0.6541	0.6541
Median	0.8881	0.9456	0.9491
Worst	224.7562	224.7562	224.7562
v	80.1402	167.3510	240.8906
Mean	9.1400	5.2493	4.5070
std	40.8520	28.9358	24.2569

Table 13: Error Values Problem pg13 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	5.7593	8.4140	1.7891
Median	665.8064	652.5063	651.9946
Worst	101.2891	87.1158	87.1158
v	562.5816	1107.2851	1653.0307
Mean	632.8119	627.5299	626.3013
std	192.3035	187.0460	174.6765

Table 14: Error Values Problem pg14 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	3.9184	3.9184	4.4535
Median	24.3534	21.8871	19.7296
Worst	1952.3922	1952.3922	1952.3922

v	777.2505	1523.4551	2138.0646
Mean	36.4240	34.1606	31.6453
std	40.2304	37.1709	33.8361

Table 15: Error Values Problem pg15 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	0.5226	0.4472	0.4472
Median	1.0054	0.7568	0.8021
Worst	1.7707	4.4222	4.4222
v	119423.7158	185205.5503	321256.3808
Mean	1.2792	1.2198	1.1772
std	1.2836	1.4139	1.2510

Table 16: Error Values Problem pg16 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	85.0303	108.1694	108.1694
Median	5445.8984	6036.8859	5044.4083
Worst	35013.0030	43416.4431	43416.4431
v	6096.6954	12951.9881	19125.0402
Mean	6526.8594	6901.8852	6345.0290
std	4521.9701	5477.6167	5507.3262

Table 17: Error Values Problem pg17 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	2.3129	0.6043	0.8385
Median	17.0046	14.2955	14.5390
Worst	34.5138	34.5138	90.7842
v	16171.3625	31335.7745	47628.3319
Mean	18.6011	16.0306	18.0485
std	13.6523	13.0726	16.4610

Table 18: Error Values Problem pg18 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	202.3033	42.7202	42.7202
Median	6948.5697	7089.4039	7194.5475
Worst	17423.5587	17423.5587	17423.5587
v	0.0000	0.0000	0.0000
Mean	7467.5982	7638.3957	7487.6907
std	3684.7548	3829.6213	3774.3532

Table 19: Error Values Problem pg19 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	4.6745	4.5016	4.5016
Median	15.0027	14.3308	14.3783
Worst	19.9606	19.9606	20.8080
v	365.5137	722.6425	1084.5100
Mean	14.3831	14.2653	14.2911
std	3.0166	2.9751	3.0786

Table 20: Error Values Problem pg20 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	716.4659	716.4659	494.3108
Median	438.9633	425.1747	405.6938
Worst	1171.5296	1171.5296	1192.1998
v	6657.4882	10865.2053	16365.3282
Mean	407.5229	399.3765	390.0251
std	251.2414	244.7646	246.2551

Table 21: Error Values Problem pg21 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	7498.3288	4517.6872	4517.6872
Median	7308.4738	8707.2777	8153.9231
Worst	20089.4555	20089.4555	20089.4555
v	7763902663.6219	15438439357.7070	24475852618.9137
Mean	8384.5196	9172.2321	8663.7995
std	6330.4517	5890.1768	5727.1958

Table 22: Error Values Problem pg22 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	125.8105	125.8105	125.8105
Median	1264.5738	1343.9044	1360.7466
Worst	2577.9264	2832.8742	3164.8794
v	1280.9020	2711.6006	3985.3624
Mean	1363.3071	1498.7053	1511.0285
std	973.5534	1023.8601	1033.6407

Table 23: Error Values Problem pg23 using Differential Evolution

FES	5×10^3	5×10^4	5×10^5
Best	0.8262	0.0582	0.0199
Median	2.1056	1.9643	1.9061
Worst	7.1774	7.1744	6.2868
v	0.0205	0.0205	0.4549
Mean	2.1241	1.9946	1.9642
std	0.8852	0.8153	0.9027

Table 24: Error Values Problem pg24 using Differential Evolution

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg01	7.3844	42.2771	37.3844	44.2701	19.3402	0.0000	0.0000	-1.0000
50000	pg01	1.0328	47.0339	24.5235	48.5269	23.6464	0.0000	0.0000	-1.0000
500000	pg01	1.0328	47.7737	24.5235	48.0500	22.7917	0.0000	0.0000	-1.0000

Table 25: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg02	0.1752	0.6620	0.9237	0.6420	0.0895	1.0000	0.0000	-1.0000
50000	pg02	0.0438	0.6554	0.9237	0.6362	0.1008	1.0000	0.0000	-1.0000
500000	pg02	0.0438	0.6554	0.9237	0.6385	0.0936	1.0000	0.0000	-1.0000

Table 26: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg03	0.3549	0.9745	1.0007	3.2944	6.4010	0.0000	0.0000	-1.0000
50000	pg03	0.0784	0.9590	1.0007	2.8089	5.9951	0.0000	0.0000	-1.0000
500000	pg03	0.0020	0.9445	1.0007	2.6131	5.3792	0.0000	0.0000	-1.0000

Table 27: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg04	811.3856	2894.4094	55117.3428	2963.7607	1412.2750	0.9333	0.0000	-1.0000
50000	pg04	728.3927	2957.5855	55117.3428	2862.6765	1258.6293	0.9333	0.0000	-1.0000
500000	pg04	577.8440	2876.5112	55117.3428	2823.0601	1367.5077	0.9000	0.0000	-1.0000

Table 28: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg05	58.2151	1952.4004	12170.3422	2122.3808	1475.4649	0.0000	0.0000	-1.0000
50000	pg05	58.2151	1893.7007	12884.5126	1942.4414	1311.5200	0.0000	0.0000	-1.0000
500000	pg05	58.2151	1848.4052	13364.3995	1916.9435	1281.1334	0.0000	0.0000	-1.0000

Table 29: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg06	2055.8073	17811.3333	250302.3458	50688.2317	70032.5089	0.0333	0.0000	-1.0000
50000	pg06	2055.8073	19862.7616	250302.3458	47348.4786	59790.1021	0.0000	0.0000	-1.0000
500000	pg06	95.5784	21589.5328	317406.5835	49449.6065	63227.4147	0.0333	0.0000	-1.0000

Table 30: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg07	1.1813	1598.7256	3637.9277	1713.9945	1065.8146	0.0333	0.0000	-1.0000
50000	pg07	0.0940	1598.7256	3796.2494	1706.5250	1030.9561	0.0333	0.0000	-1.0000
500000	pg07	0.0033	1602.3777	3796.2494	1688.3023	999.9720	0.0333	0.0000	-1.0000

Table 31: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg08	0.0661	0.0957	0.3080	0.8665	4.0159	0.0667	0.0000	-1.0000
50000	pg08	0.0240	0.0958	0.3080	0.6896	3.1642	0.1333	0.0000	-1.0000
500000	pg08	0.0104	0.0959	9.9636	1.0696	5.0929	0.0667	0.0000	-1.0000

Table 32: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg09	756.3859	88139.6178	8951321.6278	1375285.8886	2667918.2708	0.1000	0.0000	-1.0000
50000	pg09	5.5099	191715.2827	8951321.6278	1393523.5467	2400102.1284	0.1333	0.0000	-1.0000
500000	pg09	5.5099	191715.2827	9857967.1608	1809201.2601	2847475.7549	0.1000	0.0000	-1.0000

Table 33: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg10	250.6386	9087.5135	28737.2542	8508.9726	4072.8683	0.0000	0.0000	-1.0000
50000	pg10	250.6386	8869.9390	34552.1996	9157.3919	4275.2339	0.0000	0.0000	-1.0000
500000	pg10	158.1048	8869.9390	34552.1996	8952.2725	4381.2137	0.0000	0.0000	-1.0000

Table 34: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg11	0.0025	0.2124	2.6042	0.2975	0.3024	0.0333	0.0000	-1.0000
50000	pg11	0.0025	0.1172	2.6042	0.2348	0.2584	0.0333	0.0000	-1.0000

500000	pg11	0.0025	0.1373	2.7061	0.2415	0.2709	0.0667	0.0000	-1.0000
Table 35: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance									

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg12	0.0642	0.2022	1.6196	0.2027	0.0874	0.1667	0.0000	-1.0000
50000	pg12	0.0000	0.2052	1.5568	0.2071	0.0929	0.3000	0.0333	1455848.0000
500000	pg12	0.0000	0.1967	1.5568	0.1989	0.0939	0.4333	0.0000	-1.0000
Table 36: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance									

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg13	0.0309	0.8881	224.7562	9.1400	40.8520	0.0000	0.0000	-1.0000
50000	pg13	0.0095	0.9456	224.7562	5.2493	28.9358	0.0000	0.0000	-1.0000
500000	pg13	0.0095	0.9491	224.7562	4.5070	24.2569	0.0000	0.0000	-1.0000
Table 37: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance									

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg14	5.7593	665.8064	101.2891	632.8119	192.3035	0.0000	0.0000	-1.0000
50000	pg14	5.7593	652.5063	87.1158	627.5299	187.0460	0.0333	0.0000	-1.0000
500000	pg14	1.7891	651.9946	87.1158	626.3013	174.6765	0.0333	0.0000	-1.0000
Table 38: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance									

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg15	0.2534	24.3534	1952.3922	36.4240	40.2304	0.0000	0.0000	-1.0000
50000	pg15	0.2534	21.8871	1952.3922	34.1606	37.1709	0.0000	0.0000	-1.0000
500000	pg15	0.1739	19.7296	1952.3922	31.6453	33.8361	0.0000	0.0000	-1.0000
Table 39: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance									

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg16	0.2596	1.0054	1.7707	1.2792	1.2836	0.0000	0.0000	-1.0000
50000	pg16	0.0038	0.7568	4.4222	1.2198	1.4139	0.0333	0.0000	-1.0000
500000	pg16	0.0038	0.8021	4.4222	1.1772	1.2510	0.0000	0.0000	-1.0000

Table 40: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg17	85.0303	5445.8984	35013.0030	6526.8594	4521.9701	0.0000	0.0000	-1.0000
50000	pg17	85.0303	6036.8859	43416.4431	6901.8852	5477.6167	0.0000	0.0000	-1.0000
500000	pg17	44.2937	5044.4083	43416.4431	6345.0290	5507.3262	0.0000	0.0000	-1.0000

Table 41: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg18	0.0642	17.0046	34.5138	18.6011	13.6523	0.0000	0.0000	-1.0000
50000	pg18	0.0642	14.2955	34.5138	16.0306	13.0726	0.0000	0.0000	-1.0000
500000	pg18	0.0642	14.5390	90.7842	18.0485	16.4610	0.0000	0.0000	-1.0000

Table 42: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg19	202.3033	6948.5697	17423.5587	7467.5982	3684.7548	1.0000	0.0000	-1.0000
50000	pg19	42.7202	7089.4039	17423.5587	7638.3957	3829.6213	1.0000	0.0000	-1.0000
500000	pg19	42.7202	7194.5475	17423.5587	7487.6907	3774.3532	1.0000	0.0000	-1.0000

Table 43: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg20	4.6745	15.0027	19.9606	14.3831	3.0166	0.0000	0.0000	-1.0000
50000	pg20	4.5016	14.3308	19.9606	14.2653	2.9751	0.0000	0.0000	-1.0000
500000	pg20	2.8388	14.3783	20.8080	14.2911	3.0786	0.0000	0.0000	-1.0000

Table 44: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg21	1.7504	438.9633	1171.5296	407.5229	251.2414	0.0000	0.0000	-1.0000
50000	pg21	1.7504	425.1747	1171.5296	399.3765	244.7646	0.0000	0.0000	-1.0000
500000	pg21	1.7504	405.6938	1192.1998	390.0251	246.2551	0.0000	0.0000	-1.0000

Table 45: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg22	127.6702	7308.4738	20089.4555	8384.5196	6330.4517	0.0000	0.0000	-1.0000
50000	pg22	127.6702	8707.2777	20089.4555	9172.2321	5890.1768	0.0000	0.0000	-1.0000
500000	pg22	116.7558	8153.9231	20089.4555	8663.7995	5727.1958	0.0000	0.0000	-1.0000

Table 46: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg23	0.9881	1264.5738	2577.9264	1363.3071	973.5534	0.0000	0.0000	-1.0000
50000	pg23	0.9881	1343.9044	2832.8742	1498.7053	1023.8601	0.0000	0.0000	-1.0000
500000	pg23	0.9881	1360.7466	3164.8794	1511.0285	1033.6407	0.0000	0.0000	-1.0000

Table 47: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance

Max FES	Prob.	Best	Median	Worst	Mean	Std	FR	SR	SP
5000	pg24	0.1836	2.1056	7.1774	2.1241	0.8852	0.9667	0.0000	-1.0000
50000	pg24	0.0582	1.9643	7.1744	1.9946	0.8153	1.0000	0.0000	-1.0000
500000	pg24	0.0199	1.9061	6.2868	1.9642	0.9027	0.9667	0.0000	-1.0000

Table 48: Differential Evolution. Number of FES to achieve the fixed accuracy level ($f(\mathbf{x}) - f(\mathbf{x}^*) \leq 0.0001$), Success Rate, Feasible Rate and Success Performance