File - Lamarck_main

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 1 /Users/meijiaojiao/opt/anaconda3/envs/RunToEnd/bin/python /Users/meijiaojiao/Desktop/Evolution_algorithm/stuck in local minima/L/Lamarck_main.py
 2 [['iterations', 'mutation_rate', 'num_individuals', 'crossover_probability', 'Mutation_type', 'Crossover_type', 'local_search_rate', 'Local_search_type', 'R']]
 3 [[1000000, 1.0, 200, 0.6, 'Normal', 'Probabilistic_crossover', 0.5, 'Uniform', 0.1]] [579]
 4 2022-11-20 20:09:08
 5 Now testing Function21
 6 Times is 0
 7 Iter at 1998,  best solution is -2.68040E+00,  optima is -10.1532,  similarity is 5.49420E+00,  phenotype is [6.005655309483979, 5.986095076136162, 6.003778584194963, 5.989337274461864]
 8 Iter at 3998,  best solution is -4.92370E+00,  optima is -10.1532,  similarity is 3.73928E+02,  phenotype is [8.01364716281395, 8.0668561662771, 7.9580875596653895, 8.029666571103014]
 9 Iter at 5998,  best solution is -5.09841E+00,  optima is -10.1532,  similarity is 4.40115E+00,  phenotype is [7.999003239509342, 8.006715894154528, 7.993321210285901, 7.997393444150569]
10 Iter at 7998,  best solution is -5.09955E+00,  optima is -10.1532,  similarity is 3.72506E+00,  phenotype is [7.999003239509342, 7.997518437746112, 7.993321210285901, 7.997393444150569]
11 Iter at 9998,  best solution is -5.10031E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999003239509342, 7.997518437746112, 7.997518437746112, 7.996631247479903, 7.997393444150569]
12 Iter at 11998,  best solution is -5.10062E+00,  optima is -10.1532,  similarity is 1.09514E+00,  phenotype is [7.999003239509342, 7.997518437746112, 7.998525860729292, 7.999283569924094]
13 Iter at 13998,  best solution is -5.10062E+00,  optima is -10.1532,  similarity is 8.61655E-01,  phenotype is [7.999045906498318, 7.997518437746112, 7.998525860729292, 7.999283569924094]
14 Iter at 15998,  best solution is -5.10064E+00,  optima is -10.1532,  similarity is 5.77314E-01,  phenotype is [7.9993509781677545, 7.997666615861345, 7.998525860729292, 7.999283569924094]
15 Iter at 17998,  best solution is -5.10064E+00,  optima is -10.1532,  similarity is 1.76907E+00,  phenotype is [7.9993509781677545, 7.99769391099685, 7.998525860729292, 7.999283569924094]
16 Iter at 19998,  best solution is -5.10074E+00,  optima is -10.1532,  similarity is 4.47292E-01,  phenotype is [7.9993509781677545, 7.999802198217538, 7.998525860729292, 7.999283569924094]
17 Iter at 21998,  best solution is -5.10074E+00,  optima is -10.1532,  similarity is 5.55280E-01,  phenotype is [7.9993509781677545, 7.999802198217538, 7.998525860729292, 7.999283569924094]
18 Iter at 23998,  best solution is -5.10074E+00,  optima is -10.1532,  similarity is 1.07930E+00,  phenotype is [7.9993509781677545, 7.999802198217538, 7.998525860729292, 7.999283569924094]
19 Iter at 25998,  best solution is -5.10074E+00,  optima is -10.1532,  similarity is 6.10077E-01,  phenotype is [7.9993509781677545, 7.999802198217538, 7.998525860729292, 7.999283569924094]
20 Iter at 27998,  best solution is -5.10074E+00,  optima is -10.1532,  similarity is 4.72960E-01,  phenotype is [7.9993509781677545, 7.999802198217538, 7.998525860729292, 7.999283569924094]
21 Iter at 29998,  best solution is -5.10074E+00,  optima is -10.1532,  similarity is 8.57414E-01,  phenotype is [7.9993509781677545, 7.999802198217538, 7.998525860729292, 7.999283569924094]
22 Iter at 31998,  best solution is -5.10074E+00,  optima is -10.1532,  similarity is 7.91020E-01,  phenotype is [7.9993509781677545, 7.999802198217538, 7.998525860729292, 7.999577552689169]
23 Iter at 33998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 1.40790E-01,  phenotype is [7.9993509781677545, 7.999802198217538, 6.28642125564127, 7.999577552689169]
24 Iter at 35998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 1.52120E+00,  phenotype is [7.9993509781677545, 7.999802198217538, 6.28642125564127, 7.999577552689169]
25 Iter at 37998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.9993509781677545, 7.999802198217538, 6.28642125564127, 7.999577552689169]
26 Iter at 39998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 3.69729E-01,  phenotype is [7.9993509781677545, 7.999802198217538, 6.28642125564127, 7.999577552689169]
27 Iter at 41998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 8.04995E-01,  phenotype is [7.9993509781677545, 7.999802198217538, 6.28642125564127, 7.999577552689169]
28 Iter at 43998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 7.59818E-01,  phenotype is [7.9993509781677545, 7.999802198217538, 6.28642125564127, 7.999577552689169]
29 Iter at 45998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 9.41753E-01,  phenotype is [7.9993509781677545, 7.999802198217538, 6.28642125564127, 7.999577552689169]
30 Iter at 47998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 8.92642E-01,  phenotype is [7.9993509781677545, 7.999802198217538, 6.28642125564127, 7.999577552689169]
31 Iter at 49998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 1.37057E-01,  phenotype is [7.9993509781677545, 7.999802198217538, 6.28642125564127, 7.999577552689169]
32 Iter at 51998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 1.69135E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.999577552689169]
33 Iter at 53998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 9.47145E-01,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.999577552689169]
34 Iter at 55998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 1.88018E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.999577552689169]
35 Iter at 57998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 9.59514E-01,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.999577552689169]
36 Iter at 59998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 7.76879E-01,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.999577552689169]
37 Iter at 61998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 6.95932E-01,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.999577552689169]
38 Iter at 63998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 8.33185E-01,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.999577552689169]
39 Iter at 65998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 2.78207E-01,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.999577552689169]
40 Iter at 67998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.999577552689169]
41 Iter at 69998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 1.71717E-01,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.999577552689169]
42 Iter at 71998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 1.19671E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.999577552689169]
43 Iter at 73998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 2.47176E-01,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.9996289189744205]
44 Iter at 75998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 6.24326E-01,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.9996289189744205]
45 Iter at 77998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 4.30302E-02,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.9996289189744205]
46 Iter at 79998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 4.65624E-01,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.9996289189744205]
47 Iter at 81998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 1.09454E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.9996289189744205]
48 Iter at 83998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 3.38700E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.9996289189744205]
49 Iter at 85998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.9996289189744205]
50 Iter at 87998,  best solution is -5.10076E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 8.000113988467167, 7.9996289189744205]
51 Iter at 89998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.67322E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
52 Iter at 91998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
53 Iter at 93998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.56754E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
54 Iter at 95998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.27996E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
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 55 Iter at 97998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 56 Iter at 99998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 57 Iter at 101998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.08995E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 58 Iter at 103998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 59 Iter at 105998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.47955E-01,  phenotype is [7.9993509781677545, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 60 Iter at 107998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 61 Iter at 109998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.16971E-01,  phenotype is [7.9993509781677545, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 62 Iter at 111998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.84960E-01,  phenotype is [7.9993509781677545, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 63 Iter at 113998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 64 Iter at 115998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.9993509781677545, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 65 Iter at 117998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.29947E-01,  phenotype is [7.9997039972784805, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 66 Iter at 119998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.13806E+00,  phenotype is [7.999532389086384, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 67 Iter at 121998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.03270E-01,  phenotype is [7.999532389086384, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 68 Iter at 123998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 69 Iter at 125998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.16215E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 70 Iter at 127998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 71 Iter at 129998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.85681E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 72 Iter at 131998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.59457E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 73 Iter at 133998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.83766E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.9991380673180394, 7.9996289189744205]
 74 Iter at 135998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.55697E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 75 Iter at 137998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.32100E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 76 Iter at 139998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.03150E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 77 Iter at 141998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 78 Iter at 143998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.36030E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 79 Iter at 145998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.63702E-02,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 80 Iter at 147998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.13382E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 81 Iter at 149998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.81390E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 82 Iter at 151998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 83 Iter at 153998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.11496E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 84 Iter at 155998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 85 Iter at 157998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.49378E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 86 Iter at 159998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 87 Iter at 161998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.58963E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 88 Iter at 163998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.00029E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 89 Iter at 165998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.84486E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 90 Iter at 167998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.77623E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 91 Iter at 169998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.48495E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 92 Iter at 171998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.08543E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 93 Iter at 173998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 94 Iter at 175998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 95 Iter at 177998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.62715E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 96 Iter at 179998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.04599E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 97 Iter at 181998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 98 Iter at 183998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
 99 Iter at 185998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.68734E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
100 Iter at 187998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
101 Iter at 189998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
102 Iter at 191998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.00485E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
103 Iter at 193998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
104 Iter at 195998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.09713E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
105 Iter at 197998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.45783E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
106 Iter at 199998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.46885E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
107 Iter at 201998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.34224E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
108 Iter at 203998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
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109 Iter at 205998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.14680E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
110 Iter at 207998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.17408E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
111 Iter at 209998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.58250E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
112 Iter at 211998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.22952E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
113 Iter at 213998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.12023E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
114 Iter at 215998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
115 Iter at 217998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.62480E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
116 Iter at 219998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.46264E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
117 Iter at 221998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.67489E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
118 Iter at 223998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.92228E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
119 Iter at 225998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.33787E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
120 Iter at 227998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.09129E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
121 Iter at 229998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
122 Iter at 231998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.13326E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
123 Iter at 233998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
124 Iter at 235998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
125 Iter at 237998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.44232E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
126 Iter at 239998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.54293E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
127 Iter at 241998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.68350E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999887738325847, 7.9996289189744205]
128 Iter at 243998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.06213E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
129 Iter at 245998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
130 Iter at 247998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.16697E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
131 Iter at 249998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
132 Iter at 251998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
133 Iter at 253998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.77151E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
134 Iter at 255998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.47194E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
135 Iter at 257998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.08244E-02,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
136 Iter at 259998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.65471E-02,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
137 Iter at 261998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.85177E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
138 Iter at 263998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
139 Iter at 265998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.24372E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
140 Iter at 267998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.65543E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
141 Iter at 269998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
142 Iter at 271998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.48003E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
143 Iter at 273998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.47346E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
144 Iter at 275998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
145 Iter at 277998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.72071E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
146 Iter at 279998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.39785E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
147 Iter at 281998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.03490E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
148 Iter at 283998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.02466E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
149 Iter at 285998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
150 Iter at 287998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.29730E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
151 Iter at 289998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.45686E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
152 Iter at 291998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.13195E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
153 Iter at 293998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.61120E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
154 Iter at 295998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.38985E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
155 Iter at 297998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.06102E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
156 Iter at 299998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.08718E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
157 Iter at 301998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.93389E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
158 Iter at 303998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.28528E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
159 Iter at 305998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.35941E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
160 Iter at 307998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.93061E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
161 Iter at 309998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.45350E+00,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
162 Iter at 311998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.98330E-01,   phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
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163 Iter at 313998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.37355E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
164 Iter at 315998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.91620E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
165 Iter at 317998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.01873E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
166 Iter at 319998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.48000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
167 Iter at 321998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
168 Iter at 323998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
169 Iter at 325998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
170 Iter at 327998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.78611E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
171 Iter at 329998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
172 Iter at 331998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
173 Iter at 333998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.32274E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
174 Iter at 335998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.01174E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
175 Iter at 337998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
176 Iter at 339998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
177 Iter at 341998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.46891E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
178 Iter at 343998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.18329E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
179 Iter at 345998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
180 Iter at 347998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.18810E-02,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
181 Iter at 349998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.35566E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
182 Iter at 351998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.70442E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
183 Iter at 353998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.40051E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
184 Iter at 355998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.27195E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
185 Iter at 357998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.60831E-01,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
186 Iter at 359998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999630122415346, 7.999713553557242, 7.999617631466406, 7.9996289189744205]
187 Iter at 361998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.00044E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
188 Iter at 363998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.12030E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
189 Iter at 365998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.43318E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
190 Iter at 367998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
191 Iter at 369998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.38007E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
192 Iter at 371998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.89597E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
193 Iter at 373998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.32631E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
194 Iter at 375998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.36736E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
195 Iter at 377998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.14342E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
196 Iter at 379998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.93168E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
197 Iter at 381998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.49363E-02,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
198 Iter at 383998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.18470E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
199 Iter at 385998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
200 Iter at 387998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.80753E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
201 Iter at 389998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.95490E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
202 Iter at 391998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.25912E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
203 Iter at 393998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.12564E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
204 Iter at 395998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.96819E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
205 Iter at 397998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
206 Iter at 399998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.63735E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
207 Iter at 401998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.93219E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
208 Iter at 403998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
209 Iter at 405998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
210 Iter at 407998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.11654E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
211 Iter at 409998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.34925E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
212 Iter at 411998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
213 Iter at 413998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.42301E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
214 Iter at 415998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
215 Iter at 417998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.50678E-02,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
216 Iter at 419998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.70447E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
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217 Iter at 421998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.16036E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
218 Iter at 423998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.03730E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
219 Iter at 425998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.43917E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
220 Iter at 427998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.58319E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
221 Iter at 429998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
222 Iter at 431998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.22007E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
223 Iter at 433998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.63367E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
224 Iter at 435998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.03903E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
225 Iter at 437998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.17425E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
226 Iter at 439998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.82534E-01,  phenotype is [7.999577522696818, 7.999713553557242, 7.999560906164047, 7.9996289189744205]
227 Iter at 441998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.02432E+00,  phenotype is [7.999577522696818, 7.999713553557242, 7.999597323048035, 7.9996289189744205]
228 Iter at 443998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.98972E+00,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
229 Iter at 445998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.02508E+00,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
230 Iter at 447998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
231 Iter at 449998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.83850E-02,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
232 Iter at 451998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
233 Iter at 453998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.08674E-01,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
234 Iter at 455998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.23537E-01,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
235 Iter at 457998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.66352E-01,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
236 Iter at 459998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
237 Iter at 461998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.45500E-01,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
238 Iter at 463998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.69413E-01,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
239 Iter at 465998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
240 Iter at 467998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.69359E-01,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
241 Iter at 469998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
242 Iter at 471998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
243 Iter at 473998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
244 Iter at 475998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.15581E+00,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
245 Iter at 477998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.43046E-01,  phenotype is [7.999577522696818, 7.999701490713925, 7.999597323048035, 7.9996289189744205]
246 Iter at 479998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.53182E-01,  phenotype is [7.999577522696818, 7.999701490713925, 7.999578123256087, 7.9996289189744205]
247 Iter at 481998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.10832E+00,  phenotype is [7.999577522696818, 7.999701490713925, 7.999578123256087, 7.9996289189744205]
248 Iter at 483998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.22001E-01,  phenotype is [7.999577522696818, 7.999701490713925, 7.999578123256087, 7.9996289189744205]
249 Iter at 485998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999701490713925, 7.999578123256087, 7.9996289189744205]
250 Iter at 487998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.37125E-01,  phenotype is [7.999577522696818, 7.999701490713925, 7.999578123256087, 7.9996289189744205]
251 Iter at 489998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999701490713925, 7.999578123256087, 7.9996289189744205]
252 Iter at 491998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.44884E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
253 Iter at 493998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
254 Iter at 495998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
255 Iter at 497998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
256 Iter at 499998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.20454E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
257 Iter at 501998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.05810E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
258 Iter at 503998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.75637E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
259 Iter at 505998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.07725E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
260 Iter at 507998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
261 Iter at 509998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.47569E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
262 Iter at 511998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
263 Iter at 513998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
264 Iter at 515998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.00010E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
265 Iter at 517998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
266 Iter at 519998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.21308E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
267 Iter at 521998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.47937E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
268 Iter at 523998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
269 Iter at 525998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.43125E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
270 Iter at 527998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.86404E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
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271 Iter at 529998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.63753E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
272 Iter at 531998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
273 Iter at 533998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.54660E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
274 Iter at 535998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.06148E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
275 Iter at 537998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.78244E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
276 Iter at 539998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.09841E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
277 Iter at 541998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.98670E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
278 Iter at 543998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.04083E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
279 Iter at 545998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.49917E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
280 Iter at 547998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.83346E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
281 Iter at 549998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.99634E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
282 Iter at 551998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
283 Iter at 553998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
284 Iter at 555998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.04944E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
285 Iter at 557998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
286 Iter at 559998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.74050E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
287 Iter at 561998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.06241E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
288 Iter at 563998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
289 Iter at 565998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.01072E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
290 Iter at 567998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.03360E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
291 Iter at 569998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
292 Iter at 571998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
293 Iter at 573998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.00190E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
294 Iter at 575998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.49286E+00,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
295 Iter at 577998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.31885E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
296 Iter at 579998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.19275E-02,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
297 Iter at 581998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.73492E-01,  phenotype is [7.999577522696818, 7.999596720300425, 7.999578123256087, 7.9996289189744205]
298 Iter at 583998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.45314E-02,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
299 Iter at 585998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.82231E-01,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
300 Iter at 587998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
301 Iter at 589998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.49172E-01,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
302 Iter at 591998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
303 Iter at 593998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.89050E+00,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
304 Iter at 595998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
305 Iter at 597998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.85335E-01,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
306 Iter at 599998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.46734E-01,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
307 Iter at 601998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.79919E-01,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
308 Iter at 603998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.59117E+00,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
309 Iter at 605998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
310 Iter at 607998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.30434E+00,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
311 Iter at 609998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.96416E-01,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
312 Iter at 611998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.58003E+00,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
313 Iter at 613998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.24294E+00,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
314 Iter at 615998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.93871E-01,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
315 Iter at 617998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.50526E-02,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
316 Iter at 619998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.63945E+00,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
317 Iter at 621998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.57622E-01,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
318 Iter at 623998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.89520E-01,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
319 Iter at 625998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.64751E-01,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
320 Iter at 627998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999577522696818, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
321 Iter at 629998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.32839E-03,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
322 Iter at 631998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.45411E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
323 Iter at 633998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.63327E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
324 Iter at 635998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
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325 Iter at 637998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
326 Iter at 639998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
327 Iter at 641998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.64699E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
328 Iter at 643998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.69454E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
329 Iter at 645998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.31494E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
330 Iter at 647998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
331 Iter at 649998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.17621E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
332 Iter at 651998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.00783E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
333 Iter at 653998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.41094E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
334 Iter at 655998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.65474E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
335 Iter at 657998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.20835E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
336 Iter at 659998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.20756E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
337 Iter at 661998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
338 Iter at 663998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
339 Iter at 665998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
340 Iter at 667998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.60160E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
341 Iter at 669998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.65778E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
342 Iter at 671998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
343 Iter at 673998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.86982E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
344 Iter at 675998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.51776E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
345 Iter at 677998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.01640E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
346 Iter at 679998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
347 Iter at 681998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.48992E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
348 Iter at 683998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
349 Iter at 685998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.49413E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
350 Iter at 687998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
351 Iter at 689998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
352 Iter at 691998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.10448E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
353 Iter at 693998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.28803E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
354 Iter at 695998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.36235E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
355 Iter at 697998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.29664E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
356 Iter at 699998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.41077E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
357 Iter at 701998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.48731E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
358 Iter at 703998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
359 Iter at 705998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
360 Iter at 707998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.84749E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
361 Iter at 709998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.29043E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
362 Iter at 711998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.93150E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
363 Iter at 713998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.59271E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
364 Iter at 715998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
365 Iter at 717998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.53261E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
366 Iter at 719998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.01394E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
367 Iter at 721998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.08462E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
368 Iter at 723998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.23551E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
369 Iter at 725998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.19021E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
370 Iter at 727998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
371 Iter at 729998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.43414E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
372 Iter at 731998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.24542E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
373 Iter at 733998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
374 Iter at 735998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.29279E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
375 Iter at 737998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.81941E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
376 Iter at 739998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.39814E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
377 Iter at 741998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
378 Iter at 743998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.38120E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
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379 Iter at 745998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
380 Iter at 747998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
381 Iter at 749998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.34220E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
382 Iter at 751998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.27322E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
383 Iter at 753998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.05759E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
384 Iter at 755998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.71046E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
385 Iter at 757998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
386 Iter at 759998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.70296E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
387 Iter at 761998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.53787E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
388 Iter at 763998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.95506E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
389 Iter at 765998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.61977E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
390 Iter at 767998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.37403E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
391 Iter at 769998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.03775E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
392 Iter at 771998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.43337E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
393 Iter at 773998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.15636E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
394 Iter at 775998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
395 Iter at 777998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.80376E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
396 Iter at 779998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
397 Iter at 781998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.35967E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
398 Iter at 783998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.39552E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
399 Iter at 785998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.15389E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
400 Iter at 787998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.89763E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
401 Iter at 789998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.77596E-02,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
402 Iter at 791998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.23867E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
403 Iter at 793998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
404 Iter at 795998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
405 Iter at 797998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.87567E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
406 Iter at 799998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.03954E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
407 Iter at 801998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
408 Iter at 803998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
409 Iter at 805998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
410 Iter at 807998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
411 Iter at 809998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.34047E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
412 Iter at 811998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.27796E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
413 Iter at 813998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.41634E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
414 Iter at 815998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.30216E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
415 Iter at 817998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.81861E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
416 Iter at 819998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
417 Iter at 821998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.54153E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
418 Iter at 823998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
419 Iter at 825998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.60763E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
420 Iter at 827998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.96272E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
421 Iter at 829998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.79507E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
422 Iter at 831998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.51223E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
423 Iter at 833998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
424 Iter at 835998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.41753E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
425 Iter at 837998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.51257E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
426 Iter at 839998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.55346E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
427 Iter at 841998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
428 Iter at 843998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.08377E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
429 Iter at 845998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
430 Iter at 847998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.42024E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
431 Iter at 849998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
432 Iter at 851998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.37263E-01,   phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
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433 Iter at 853998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.71824E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
434 Iter at 855998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.67876E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
435 Iter at 857998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
436 Iter at 859998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.73172E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
437 Iter at 861998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.41083E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
438 Iter at 863998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
439 Iter at 865998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.12990E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
440 Iter at 867998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.68018E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
441 Iter at 869998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
442 Iter at 871998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.06228E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
443 Iter at 873998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
444 Iter at 875998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.72110E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
445 Iter at 877998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.07927E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
446 Iter at 879998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.34237E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
447 Iter at 881998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
448 Iter at 883998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
449 Iter at 885998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
450 Iter at 887998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.70671E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
451 Iter at 889998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.68713E-02,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
452 Iter at 891998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
453 Iter at 893998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
454 Iter at 895998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
455 Iter at 897998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
456 Iter at 899998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.25032E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
457 Iter at 901998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.54314E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
458 Iter at 903998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
459 Iter at 905998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.82273E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
460 Iter at 907998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.96679E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
461 Iter at 909998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.56119E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
462 Iter at 911998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.49420E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
463 Iter at 913998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
464 Iter at 915998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
465 Iter at 917998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.02931E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
466 Iter at 919998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.43621E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
467 Iter at 921998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.11344E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
468 Iter at 923998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
469 Iter at 925998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
470 Iter at 927998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.27053E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
471 Iter at 929998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
472 Iter at 931998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
473 Iter at 933998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.83352E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
474 Iter at 935998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.97409E-02,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
475 Iter at 937998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 3.97433E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
476 Iter at 939998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.47671E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
477 Iter at 941998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.26179E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
478 Iter at 943998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.28866E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
479 Iter at 945998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.15045E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
480 Iter at 947998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.24903E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
481 Iter at 949998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.56628E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
482 Iter at 951998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.32709E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
483 Iter at 953998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.85053E-02,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
484 Iter at 955998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
485 Iter at 957998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.68296E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
486 Iter at 959998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
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487 Iter at 961998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.22592E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
488 Iter at 963998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.42066E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
489 Iter at 965998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.44469E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
490 Iter at 967998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
491 Iter at 969998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
492 Iter at 971998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 5.55618E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
493 Iter at 973998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
494 Iter at 975998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 7.89640E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
495 Iter at 977998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.59947E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
496 Iter at 979998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.85771E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
497 Iter at 981998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 4.78531E-02,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
498 Iter at 983998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 6.29845E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
499 Iter at 985998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
500 Iter at 987998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.62808E-02,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
501 Iter at 989998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 8.22193E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
502 Iter at 991998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 9.47908E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
503 Iter at 993998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 2.63110E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
504 Iter at 995998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 1.54920E-01,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
505 Iter at 997998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
506 Iter at 999998,  best solution is -5.10077E+00,  optima is -10.1532,  similarity is 0.00000E+00,  phenotype is [7.999585157126071, 7.999653354356651, 7.999578123256087, 7.9996289189744205]
507
508 Process finished with exit code 0
509
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