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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 20:21:08
5 Now testing Function21
6 Times is 0
7 Iter at 1998, best solution is -5.09375E+00, optima is -10.1532, similarity is 1.08088E+01, phenotype is [8.009576887162906, 7.9947075491847155, 7.9877616769967945, 7.9954603946869645]
8 Iter at 3998, best solution is -5.09849E+00, optima is -10.1532, similarity is 3.28148E+00, phenotype is [7.9948585935377015, 7.9947075491847155, 7.994345647195533, 7.9954603946869645]
9 Iter at 5998, best solution is -5.09995E+00, optima is -10.1532, similarity is 2.28490E-01, phenotype is [7.999682528892362, 7.9947075491847155, 8.001740568187927, 8.001614252070862]
10 Iter at 7998, best solution is -5.10055E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999682528892362, 8.000165425858466, 8.001740568187927, 8.001614252070862]
11 Iter at 9998, best solution is -5.10061E+00, optima is -10.1532, similarity is 5.79330E-01, phenotype is [7.999682528892362, 8.000165425858466, 8.001045139220732, 8.001614252070862]
12 Iter at 11998, best solution is -5.10061E+00, optima is -10.1532, similarity is 5.95301E-01, phenotype is [7.999682528892362, 8.000165425858466, 8.001045139220732, 8.001614252070862]
13 Iter at 13998, best solution is -5.10061E+00, optima is -10.1532, similarity is 3.64781E-01, phenotype is [7.999682528892362, 8.000165425858466, 8.001045139220732, 8.001614252070862]
14 Iter at 15998, best solution is -5.10061E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999682528892362, 8.000165425858466, 8.001045139220732, 8.001614252070862]
15 Iter at 17998, best solution is -5.10071E+00, optima is -10.1532, similarity is 1.10336E+00, phenotype is [7.999682528892362, 7.999338940921035, 8.001045139220732, 7.999060229127191]
16 Iter at 19998, best solution is -5.10072E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999682528892362, 7.999338940921035, 7.998356661219164, 7.999060229127191]
17 Iter at 21998, best solution is -5.10072E+00, optima is -10.1532, similarity is 2.78442E-01, phenotype is [7.999682528892362, 7.999338940921035, 7.998356661219164, 7.999060229127191]
18 Iter at 23998, best solution is -5.10073E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999682528892362, 7.999338940921035, 7.998356661219164, 7.999385445363402]
19 Iter at 25998, best solution is -5.10073E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999682528892362, 7.999338940921035, 7.998356661219164, 7.999385445363402]
20 Iter at 27998, best solution is -5.10073E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999682528892362, 7.999338940921035, 7.998356661219164, 7.999385445363402]
21 Iter at 29998, best solution is -5.10073E+00, optima is -10.1532, similarity is 9.25704E-01, phenotype is [7.999682528892362, 7.999338940921035, 7.998356661219164, 7.999385445363402]
22 Iter at 31998, best solution is -5.10077E+00, optima is -10.1532, similarity is 4.11538E-01, phenotype is [7.999682528892362, 7.999338940921035, 7.999329981477379, 7.999385445363402]
23 Iter at 33998, best solution is -5.10077E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999682528892362, 7.999338940921035, 7.999329981477379, 7.999385445363402]
24 Iter at 35998, best solution is -5.10077E+00, optima is -10.1532, similarity is 4.27431E-01, phenotype is [7.999682528892362, 7.999338940921035, 7.999329981477379, 7.999385445363402]
25 Iter at 37998, best solution is -5.10077E+00, optima is -10.1532, similarity is 4.26750E-01, phenotype is [7.999682528892362, 7.999338940921035, 7.999329981477379, 7.999385445363402]
26 Iter at 39998, best solution is -5.10077E+00, optima is -10.1532, similarity is 3.54159E-01, phenotype is [7.999682528892362, 7.999338940921035, 7.999329981477379, 7.999385445363402]
27 Iter at 41998, best solution is -5.10077E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999510495387853, 7.999338940921035, 7.999329981477379, 7.999385445363402]
28 Iter at 43998, best solution is -5.10077E+00, optima is -10.1532, similarity is 9.62733E-01, phenotype is [7.999510495387853, 7.999338940921035, 7.999329981477379, 7.999385445363402]
29 Iter at 45998, best solution is -5.10077E+00, optima is -10.1532, similarity is 1.25432E+00, phenotype is [7.999510495387853, 7.999338940921035, 7.999329981477379, 7.999385445363402]
30 Iter at 47998, best solution is -5.10077E+00, optima is -10.1532, similarity is 2.96438E-01, phenotype is [7.999510495387853, 7.999338940921035, 7.999329981477379, 7.999385445363402]
31 Iter at 49998, best solution is -5.10077E+00, optima is -10.1532, similarity is 6.03134E-01, phenotype is [7.999510495387853, 7.999338940921035, 7.999329981477379, 7.999385445363402]
32 Iter at 51998, best solution is -5.10077E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999510495387853, 7.999748680781884, 7.999329981477379, 7.999385445363402]
33 Iter at 53998, best solution is -5.10077E+00, optima is -10.1532, similarity is 5.91424E-01, phenotype is [7.999510495387853, 7.999748680781884, 7.999329981477379, 7.999385445363402]
34 Iter at 55998, best solution is -5.10077E+00, optima is -10.1532, similarity is 5.46911E-01, phenotype is [7.999510495387853, 7.999748680781884, 7.999329981477379, 7.999385445363402]
35 Iter at 57998, best solution is -5.10077E+00, optima is -10.1532, similarity is 1.56934E+00, phenotype is [7.999510495387853, 7.999748680781884, 7.999329981477379, 7.999385445363402]
36 Iter at 59998, best solution is -5.10077E+00, optima is -10.1532, similarity is 2.23802E-01, phenotype is [7.999510495387853, 7.999748680781884, 7.999329981477379, 7.999385445363402]
37 Iter at 61998, best solution is -5.10077E+00, optima is -10.1532, similarity is 8.04829E-01, phenotype is [7.999510495387853, 7.999748680781884, 7.999329981477379, 7.999385445363402]
38 Iter at 63998, best solution is -5.10077E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999510495387853, 7.999748680781884, 7.999329981477379, 7.999385445363402]
39 Iter at 65998, best solution is -5.10077E+00, optima is -10.1532, similarity is 9.98148E-01, phenotype is [7.999510495387853, 7.999748680781884, 7.999329981477379, 7.999385445363402]
40 Iter at 67998, best solution is -5.10077E+00, optima is -10.1532, similarity is 4.92939E-01, phenotype is [7.999510495387853, 7.999748680781884, 7.999329981477379, 7.999385445363402]
41 Iter at 69998, best solution is -5.10077E+00, optima is -10.1532, similarity is 6.33696E-01, phenotype is [7.999510495387853, 7.999748680781884, 7.999329981477379, 7.999385445363402]
42 Iter at 71998, best solution is -5.10077E+00, optima is -10.1532, similarity is 2.23798E+00, phenotype is [7.999599572438184, 7.999748680781884, 7.999329981477379, 7.9997393351749455]
43 Iter at 73998, best solution is -5.10077E+00, optima is -10.1532, similarity is 2.28747E+00, phenotype is [7.999599572438184, 7.999748680781884, 7.999329981477379, 7.9997393351749455]
44 Iter at 75998, best solution is -5.10077E+00, optima is -10.1532, similarity is 3.29235E-01, phenotype is [7.999599572438184, 7.999748680781884, 7.999329981477379, 7.9997393351749455]
45 Iter at 77998, best solution is -5.10077E+00, optima is -10.1532, similarity is 1.67831E+00, phenotype is [7.999599572438184, 7.999748680781884, 7.999329981477379, 7.9997393351749455]
46 Iter at 79998, best solution is -5.10077E+00, optima is -10.1532, similarity is 6.22150E-02, phenotype is [7.999599572438184, 7.999748680781884, 7.999329981477379, 7.9997393351749455]
47 Iter at 81998, best solution is -5.10077E+00, optima is -10.1532, similarity is 1.24721E+00, phenotype is [7.999599572438184, 7.999748680781884, 7.999329981477379, 7.9997393351749455]
48 Iter at 83998, best solution is -5.10077E+00, optima is -10.1532, similarity is 5.34715E-01, phenotype is [7.999599572438184, 7.999748680781884, 7.999329981477379, 7.9997393351749455]
49 Iter at 85998, best solution is -5.10077E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999599572438184, 7.999748680781884, 7.999329981477379, 7.9997393351749455]
50 Iter at 87998, best solution is -5.10077E+00, optima is -10.1532, similarity is 3.42462E-01, phenotype is [7.999599572438184, 7.999748680781884, 7.999329981477379, 7.9997393351749455]
51 Iter at 89998, best solution is -5.10077E+00, optima is -10.1532, similarity is 5.09402E-01, phenotype is [7.999599572438184, 7.999748680781884, 7.999329981477379, 7.9997393351749455]
52 Iter at 91998, best solution is -5.10077E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999599572438184, 7.999748680781884, 7.999329981477379, 7.9997393351749455]
53 Iter at 93998, best solution is -5.10077E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999599572438184, 7.999748680781884, 7.999467856293006, 7.9997393351749455]
54 Iter at 95998, best solution is -5.10077E+00, optima is -10.1532, similarity is 2.43817E-02, phenotype is [7.999599572438184, 7.999748680781884, 7.999467856293006, 7.9997393351749455]
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55	Iter	at	97998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	2.69929E-01,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999467856293006,	7.9997393351749455]
56	Iter	at	99998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	0.00000E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999467856293006,	7.9997393351749455]
57	Iter	at	101998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.32612E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999467856293006,	7.9997393351749455]
58	Iter	at	103998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	9.54367E-01,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999467856293006,	7.9997393351749455]
59	Iter	at	105998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	0.00000E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999467856293006,	7.9997393351749455]
60	Iter	at	107998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.19721E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999467856293006,	7.9997393351749455]
61	Iter	at	109998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	8.64294E-01,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
62	Iter	at	111998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.42390E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
63	Iter	at	113998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	2.00164E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
64	Iter	at	115998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	6.40123E-01,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
65	Iter	at	117998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	7.92930E-01,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
66	Iter	at	119998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	0.00000E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
67	Iter	at	121998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	6.02665E-01,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
68	Iter	at	123998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	0.00000E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
69	Iter	at	125998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.30574E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
70	Iter	at	127998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	4.21401E-01,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
71	Iter	at	129998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	0.00000E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
72	Iter	at	131998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.44682E-01,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
73	Iter	at	133998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.48017E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
74	Iter	at	135998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.51324E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
75	Iter	at	137998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	5.64634E-01,	phenotype is	[7.9995			

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109	Iter	at	205998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.44988E-02,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
110	Iter	at	207998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	5.53301E-01,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
111	Iter	at	209998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.04416E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
112	Iter	at	211998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	9.68939E-04,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
113	Iter	at	213998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	2.56561E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
114	Iter	at	215998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	7.06286E-01,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
115	Iter	at	217998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	3.14388E-01,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
116	Iter	at	219998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.16811E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
117	Iter	at	221998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.10775E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
118	Iter	at	223998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	5.59925E-01,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
119	Iter	at	225998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	4.99053E-02,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
120	Iter	at	227998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	9.31453E-02,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
121	Iter	at	229998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.64281E+00,	phenotype is	[7.999599572438184,	7.999748680781884,	7.999493314320636,	7.9997393351749455]
122	Iter	at	231998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	2.41248E-01,	phenotype is	[7.999599572438184,	7.999553647629974,	7.999493314320636,	7.9997254821825585]
123	Iter	at	233998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.65751E+00,	phenotype is	[7.999599572438184,	7.999553647629974,	7.999493314320636,	7.9997254821825585]
124	Iter	at	235998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.98897E-01,	phenotype is	[7.999599572438184,	7.999553647629974,	7.999493314320636,	7.9997254821825585]
125	Iter	at	237998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	3.17862E-01,	phenotype is	[7.999599572438184,	7.999553647629974,	7.999493314320636,	7.9997254821825585]
126	Iter	at	239998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.13753E-01,	phenotype is	[7.999599572438184,	7.999553647629974,	7.999493314320636,	7.9997254821825585]
127	Iter	at	241998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	1.17332E+00,	phenotype is	[7.999599572438184,	7.999553647629974,	7.999493314320636,	7.9997254821825585]
128	Iter	at	243998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	5.92395E-01,	phenotype is	[7.999599572438184,	7.999553647629974,	7.999493314320636,	7.9997254821825585]
129	Iter	at	245998,	best solution is	-5.10077E+00,	optima is	-10.1532,	similarity is	2.19701					



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[illegible]

## File - Lamarck\_main

271	Iter	at	529998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
272	Iter	at	531998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
273	Iter	at	533998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
274	Iter	at	535998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
275	Iter	at	537998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
276	Iter	at	539998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.25447E+00,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
277	Iter	at	541998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
278	Iter	at	543998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.07448E+00,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
279	Iter	at	545998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.33204E-01,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
280	Iter	at	547998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.03631E+00,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
281	Iter	at	549998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	2.06176E+00,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
282	Iter	at	551998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.41236E+00,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
283	Iter	at	553998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
284	Iter	at	555998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
285	Iter	at	557998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	6.98468E-01,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
286	Iter	at	559998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	4.68501E-01,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
287	Iter	at	561998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	2.79814E-01,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
288	Iter	at	563998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	3.59891E-01,	phenotype	is	[7.999599572438184,	7.999639215929434,	7.999575738521806,	7.99967702895664]
289	Iter	at	565998,	best	solution	is	-5.10077E+00,	optima	is										

## File - Lamarck\_main

[illegible]



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379	Iter	at	745998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	4.53353E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
380	Iter	at	747998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
381	Iter	at	749998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
382	Iter	at	751998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	8.63470E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
383	Iter	at	753998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
384	Iter	at	755998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.00577E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
385	Iter	at	757998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	3.62260E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
386	Iter	at	759998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
387	Iter	at	761998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	4.32108E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
388	Iter	at	763998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
389	Iter	at	765998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.56964E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
390	Iter	at	767998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	2.09869E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
391	Iter	at	769998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.19840E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
392	Iter	at	771998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	8.93426E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
393	Iter	at	773998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	4.70750E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
394	Iter	at	775998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.28780E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
395	Iter	at	777998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.65708E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
396	Iter	at	779998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.68428E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
397	Iter	at	781998,	best	solution	is	-5.10077E+												



## File - Lamarck\_main

433	Iter	at	853998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	7.29723E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
434	Iter	at	855998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
435	Iter	at	857998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
436	Iter	at	859998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.04642E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
437	Iter	at	861998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
438	Iter	at	863998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.57655E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
439	Iter	at	865998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	6.14894E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
440	Iter	at	867998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	4.48653E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
441	Iter	at	869998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.30471E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
442	Iter	at	871998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.48968E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
443	Iter	at	873998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.98095E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
444	Iter	at	875998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	5.88737E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
445	Iter	at	877998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.74736E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
446	Iter	at	879998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	5.71242E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
447	Iter	at	881998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
448	Iter	at	883998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	6.06920E-01,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
449	Iter	at	885998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	0.00000E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
450	Iter	at	887998,	best	solution	is	-5.10077E+00,	optima	is	-10.1532,	similarity	is	1.03683E+00,	phenotype	is	[7.999568220585948,	7.999639215929434,	7.999578431210163,	7.999659703498437]
451	Iter	at	889998,	best	solution	is	-5.10077E+												

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487 Iter at 961998, best solution is -5.10077E+00, optima is -10.1532, similarity is 2.42458E+00, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
488 Iter at 963998, best solution is -5.10077E+00, optima is -10.1532, similarity is 3.13950E-01, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
489 Iter at 965998, best solution is -5.10077E+00, optima is -10.1532, similarity is 1.24049E+00, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
490 Iter at 967998, best solution is -5.10077E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
491 Iter at 969998, best solution is -5.10077E+00, optima is -10.1532, similarity is 4.69391E-01, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
492 Iter at 971998, best solution is -5.10077E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
493 Iter at 973998, best solution is -5.10077E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
494 Iter at 975998, best solution is -5.10077E+00, optima is -10.1532, similarity is 0.00000E+00, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
495 Iter at 977998, best solution is -5.10077E+00, optima is -10.1532, similarity is 1.26071E+00, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
496 Iter at 979998, best solution is -5.10077E+00, optima is -10.1532, similarity is 3.73994E-01, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
497 Iter at 981998, best solution is -5.10077E+00, optima is -10.1532, similarity is 1.92153E+00, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
498 Iter at 983998, best solution is -5.10077E+00, optima is -10.1532, similarity is 1.96018E+00, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
499 Iter at 985998, best solution is -5.10077E+00, optima is -10.1532, similarity is 1.24905E+00, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
500 Iter at 987998, best solution is -5.10077E+00, optima is -10.1532, similarity is 1.52787E+00, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
501 Iter at 989998, best solution is -5.10077E+00, optima is -10.1532, similarity is 7.89903E-01, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
502 Iter at 991998, best solution is -5.10077E+00, optima is -10.1532, similarity is 1.97119E+00, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
503 Iter at 993998, best solution is -5.10077E+00, optima is -10.1532, similarity is 7.11662E-02, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
504 Iter at 995998, best solution is -5.10077E+00, optima is -10.1532, similarity is 8.78967E-01, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
505 Iter at 997998, best solution is -5.10077E+00, optima is -10.1532, similarity is 1.75846E+00, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
506 Iter at 999998, best solution is -5.10077E+00, optima is -10.1532, similarity is 6.03863E-01, phenotype is [7.999568220585948, 7.999639215929434, 7.999578431210163, 7.999659703498437]
507
508 Process finished with exit code 0
509
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