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**УПРАВЛЕНИЕ ЭВОЛЮЦИОННЫМИ
АЛГОРИТМАМИ ОПТИМИЗАЦИИ
В ИМИТАЦИОННЫХ ЭКСПЕРИМЕНТАХ**

... (Evolutionary Com-
putation) [1].

... () ...
... () ...
... () ...

fitness- () ...

- :
- (genetic algorithms);
- (evolution strategies);
- (genetic programming);
- (evolution programming).

[1 – 3].

$$\max\{f(i) \mid i \in \{0,1\}^n\},$$

$$I_0 = \{i_1, i_2, \dots, i_s\} -$$

[1].

« »,

(), () [2 – 4].
 (),
 « »
 ().

$$A_i = \{x_1, x_2, \dots, x_n\}, \quad n - A_i$$

$$F_i, \quad q_i$$

$$\left(\dots \right), \quad \left(\dots \right)$$

1990- – 2000-

NEDISOPT_D, [5 – 6].

) [7 – 9].

fitness- (),

fitness-

,
 .
 , [7].
 fitness-
 NEDISOPT_D
 - - , ;
 - - , ()
 , (,)
 , ,
 (). , :
 . . , ,
 , fitness-
 ()
 , - .
 , fitness- [10].
 NEDISOPT_D
 ,

. 1.

| 1 | 2 | 3 |
|------------------|----------------|---------------------------------|
| | 50 | , |
| | 20-200 | - , |
| | [0,4 ; 0,85] | |
| - - | 1 | 1, . |
| | [0; 1] | |
| | { 1, 2, } | 1, 2 - |
| | [0; 1] | , 1 () |
| | 50 % - | |
| (-) | 1 | 1, 1 |
| (- -) | 1 | 1 |
| - | 160 |) () |
| | 1 | 1 fitness- 1, fitness- |

...

. 1

| 1 | 2 | 3 |
|---|------------|---|
| | [2 ; 15] | |
| | - | |
| | 1 | 1 |

· -
-
·
« ».
-
:
- fitness- :
- , ;
- « »
- « » ;
- , ;
- () , (, ,)
·
- 24 :
- 13 , 11 ;
- 4 , 10 -
- 6 ; fitness- ,
»;

- 3 (), fitness 380 – 405;
 - 6 , fitness 600 – 730;
 - 4 , fitness 930 – 980.

, « » , -

. 2.

100

2.

| | | | |
|---------|--------------|------|----|
| | | - | |
| | [60; 160] | 10 | 11 |
| | [0,45; 0,85] | 0,05 | 9 |
| | [0; 2] | 1 | 3 |
| | [0; 1] | 0,1 | 11 |
| - | [0; 1] | 0,1 | 11 |
| , - | 12 | 1 | 12 |
| (- 24) | [0; 1] | 1 | 2 |
| | [0; 1] | 1 | 2 |

1724 976.

100

(fitness-)

[11 – 12].

20 000

100

[8, 13].

(10 20), 10 20
 . 12 / , -
 fitness- 10 (). -
 100 - . , fitness- ,
 , -
 fitness- (20 20), -
 . , -
 24), (60 – 100
 [0,45; 0,60].
 [0,50; 0,80].
 1, [0,10; 0,40],
 - () -
 , 10 – 20% .
 . « » (1). -
 . 1
 (< 20 %), -

.....

.3.

3.

| | | | |
|-----|--------------|------|---|
| | | - | |
| | [60; 120] | 10 | 7 |
| | [0,45; 0,60] | 0,05 | 4 |
| | [0; 2] | 1 | 3 |
| | [0,5; 0,8] | 0,1 | 7 |
| | [0,1; 0,4] | 0,05 | 7 |
| 24) | (- 6 | 1 | 6 |
| | [0; 1] | 1 | 2 |
| | [0; 1] | 1 | 2 |

98784.

70

fitness-

60 – 90

24

[0,05; 0,30].

24

1 4 (17 %).

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MANAGEMENT OF EVOLUTIONARY OPTIMIZATION ALGORITHMS IN SIMULATION EXPERIMENTS

We consider the possible use of the evolutionary optimization algorithm in the complex systems simulation. The influence of the parameter values of the algorithm on the efficiency of the search for optimal solutions is investigated.

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Об авторах: