一种新型自调节步长果蝇优化算法

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摘　要：为了解决传统果蝇算法在全局优化过程中存在的问题，将传统果蝇算法的步长进行改进，该算法在寻优过程中用当前迭代果蝇群中最佳浓度值与最差浓度值之差与前一次迭代果蝇群中最佳浓度值与最差浓度值之差作对比，得到浓度差值变化率.根据浓度差值变化率的大小相对应动态改变果蝇寻优步长，能够有效的权衡全局寻优能力和局部探索能力.本文改良的果蝇算法在收敛速率和寻优精度上明显优异于其他三种果蝇算法.

关键词：果蝇算法；寻优精度；浓度差值变化率；收敛速率

A New Self-changing Step Fruit Fly Optimization Algorithm

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Abstract： In order to solve the problems of the traditional fruit fly algorithm in the global optimization process, the step size of the traditional fruit fly algorithm is improved. In the process of optimization, the algorithm uses the difference between the best concentration value and the worst concentration value in the current iterative fruit fly group and the previous one. The difference between the best concentration of the Drosophila melanogaster group and the worst concentration value was compared, and the change rate of the concentration difference was obtained. According to the rate of change of concentration difference, the optimal step size of fruit flies should be changed dynamically, which can effectively balance global optimization capability and local exploration ability. The results show that the improved fruit fly algorithm is obviously superior to the other three kinds of fruit fly algorithms in the convergence rate and optimization accuracy.

Key words：〖JP3〗fruit fly algorithm; optimization accuracy; the change rate of the concentration difference; convergence rate〖JP〗

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