

# 基于自适应 t 分布变异的缎蓝园丁鸟优化算法

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**摘要:** 缎蓝园丁鸟优化算法是一种新型的元启发式优化算法, 针对其收敛速度慢、寻优精度低的不足, 提出了一种基于自适应 t 分布变异的缎蓝园丁鸟优化 (tSBO) 算法. 在 tSBO 算法中引入了自适应 t 分布变异算子, 使用算法的迭代次数作为 t 分布的自由度参数来增强种群的多样性, 避免算法陷入局部最优. 通过 6 个标准测试函数对改进算法与 FPA, BA 和基本 SBO 算法进行测试比较, 仿真结果表明, 改进算法是可行有效的, 相比于基本 SBO 算法, 其收敛精度和鲁棒性有了很大程度的提高.

**关键词:** 缎蓝园丁鸟优化算法; t 分布; 最优值; 寻优性能

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## Adaptivesatin Bower Birdoptimization Algorithm Based on Tdistribution Mutation

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**Abstract:** The satin bower bird optimization algorithm is a new meta-heuristic optimization algorithm. Due to its slow convergence rate and low optimization accuracy, a satin bower bird optimization based on adaptive t-distribution mutation (tSBO) algorithm is proposed. In the tSBO algorithm, an adaptive t distribution mutation operator is introduced, and the number of iterations of the algorithm is used as the parameter of the degree of freedom of the t distribution to enhance the diversity of the population and prevent the algorithm from falling into the local optimum. The improved algorithm is compared with FPA, BA and basic SBO algorithm through six standard test functions, and the simulation results show that the improved algorithm is feasible and effective. Compared with the basic SBO algorithm, the convergence precision and robustness are greatly improved.

**Key words:** satin bower bird optimization algorithm; t distribution; optimal value; optimal performance

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