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数据库与信息处理

一种自适应惯性权重的并行粒子群聚类算法

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摘要 针对K-means聚类算法和基于遗传（GA）的聚类算法的一些缺点,及求解实优化问题时粒子群算法优于遗传算法这一事实,提出了一种自适应惯性权重的并行粒子群聚类算法。理论分析和实验表明,该算法在收敛速度和收敛精度方面明显优于基于遗传算法的聚类方法。

关键词 聚类分析 K-均值 遗传算法 粒子群优化算法 并行计算

分类号

Cluster algorithm based on parallel particle swarm optimizer using adaptive inertia weight

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Abstract

Because of the defects of K-means cluster method and the cluster method based on genetic algorithm and the fact proved by experiments that the particle swarm optimization is superior to the genetic algorithm while solving the problems of real optimization,the cluster algorithm based on parallel particle swarm optimizer using adaptive inertia weight is proposed in this paper.Theoretics and experiments show that the proposed algorithm is obviously superior to the cluster method based on genetic algorithm since it have faster convergence rate and higher convergence accuracy.

Key words Cluster Analysis K-means Genetic Algorithm Particle Swam Optimization Algorithm Parallel Computing

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