

异构无线传感器网络中基于模拟退火算法的成本最优部署机制

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摘要：

针对异构传感器网络节点的高密度部署和监测目标非均匀分布的情况，提出了一种基于模拟退火算法的成本最优部署方法。算法在保证网络覆盖和容错性的条件下，以异构节点部署成本最小为优化目标进行操作。仿真结果表明该算法能快速收敛于最优解，有效降低网络部署的成本，提高了目标监测质量。

关键词：无线传感器网络；异构网络；节点部署；模拟退火算法

Optimal sensor deployment scheme based on simulated annealing approach in heterogeneous wireless sensor networks

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Abstract:

A optimal heterogeneous sensor differentiated deployment schemes based on simulated annealing algorithm is proposed to solve the problems of the high density of distributing heterogeneity nodes in wireless sensor networks(WSNs) and geographical irregularity of the sensed event. The algorithm uses the cost of sensors deployment as objective function in the context of assuring the coverage and fault tolerant of networks. Finally, simulation results demonstrated that the proposed approach is suitable for solving deployment problems of heterogeneous WSNs.

Keywords: heterogeneous wireless sensor network; sensor deployment ; point coverage ; simulated annealing algorithm

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