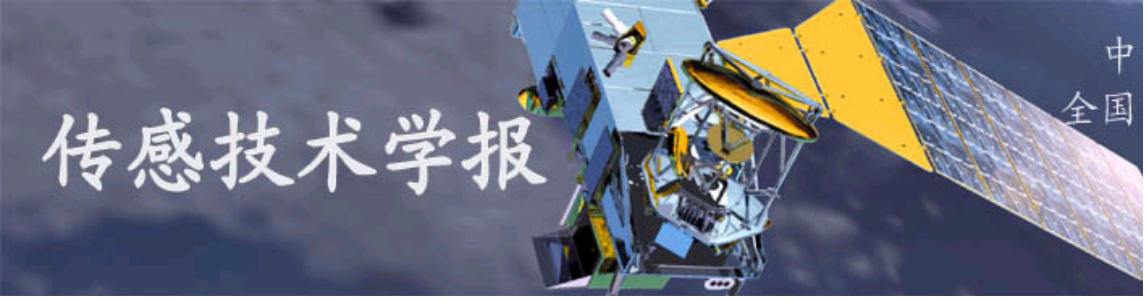

优化网络生存时间的Sink节点移动路径选择算法

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摘　要：

为克服无线传感网的能量空穴问题，采用最优化方法，研究一种优化网络生存时间的Sink节点移动路径选择算法(MP
网监测区域分成多个大小一致的网格，Sink节点可移动到任一网格中心，停留收集单跳最大通信范围内的传感节点数
感节点的能耗，建立权衡网络生存时间和Sink节点移动路程的优化模型。提出一种改进的遗传算法，用于求解优化模
异、最小覆盖处理、孤立节点处理等步骤，最终获得优化网络生存时间的Sink节点移动方案。仿真结果表明：MPSA
较小范围。在提高网络生存时间方面，比RCC算法更优。

关键词：无线传感网；网络生存时间；优化算法；传输跳数

Mobile Path Selection Algorithm of Sink Node for Optimizing Network L

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Abstract:

To overcome the energy hole problem in wireless sensor networks, optimization method is used and mobile path selection alg
lifetime (MPSA) is researched. In MPSA algorithm, the monitoring area of single-hop transmission wireless sensor network is
node can move to any grid’s center and stay to gather data in the single-hop maximum communication range. Full node co
energy consumption are analyzed. Then the optimization model which weighs network lifetime and mobile journey is establis
to solve the model. The steps such as chromosome evaluation, selection, crossover, mutation, minimum coverage processin
executed. Finally the mobile scheme of sink node for optimizing network lifetime is obtained. Simulation results show that MP
and keep mobile journey at small range. In the aspect of improving network lifetime, it is better than RCC (range constrained

Keywords: wireless sensor networks; network lifetime; optimization algorithm; transmission hop