

网络、通信、安全

无线传感器网络动态规划的能量有效路由研究

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摘要 针对无线传感器网络的能量有效路由问题, 以及能量消耗通常不满足所谓的“三角不等式”的特点, 通过建立动态规划的能量消耗模型, 将传感器网络的路由转化为矩阵和向量的运算问题, 在此基础上提出一个适合传感器网络的矩阵乘路由算法。仿真结果表明, 提出的算法能显著地降低路由的能量消耗, 有效地延长网络的生存周期。

关键词 [无线传感器网络 \(WSN\)](#) [动态规划](#) [路由](#) [矩阵](#) [能量](#)

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Research on energy efficient routing based on dynamic programming in Wireless Sensor Networks

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Abstract

Aiming to energy-efficient problem during routing in wireless sensor networks, and the characteristic of energy consuming, which can not meet with the relation of triangle-inequality, the paper transforms routing in the sensor network into the operation between matrix and vector, through the dynamic programming model of energy-consuming during routing in the sensor networks, and presents an algorithm of matrix multiplication routing, which fits the sensor networks effectively. Simulation results show that the proposed algorithm can reduce the energy-consuming during routing evidently, and prolong network lifetime effectively.

Key words [Wireless Sensor Networks \(WSN\)](#) [dynamic programming](#) [routing](#) [matrix](#) [energy](#)

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