



采用Hull树的贪婪地理位置路由算法的设计

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摘要：

地理位置路由算法是指借助节点获得的地理位置信息进行无线传感网络中的路由发现与数据转发工作。本文提出一种基于Hull树的贪婪地理位置路由算法——Greedy Hull Tree Geographic Routing (GHTGR)。通过图形学中凸包的概念，在网络初始阶段分布式地在各节点上建立Hull树以探查网络局部拓扑结构；同时在数据分组的路由转发阶段，通过Hull树内的搜索，寻找下一跳转发节点，完成数据分组的转发传输。通过仿真实验表明，与现有地理位置路由算法相比，该算法能够正确地寻找数据转发路径，有效地减少网络能耗，提高网络传输性能。

关键词：地理位置路由；凸包；Hull树；贪婪转发策略

THE DESIGN OF GEOGRAPHICAL ROUTING ALGORITHM BASED HULL TREE AND GREEDY

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Abstract:

Geographical routing algorithm with the aid of the node's geographical position carry out the route discovery and the data forwarded in wireless sensor networks. This paper proposes an approach of greedy geographic routing algorithm based on Hull tree--Greedy Hull Tree Geographic Routing (GHTGR). By using the concepts of convex hull in Graphics distributed establishing Hull tree on each node to explore local network topology in its initial stage. In the data forwarding stage, by searching in Hull tree to look for the next hop forwarding node, and complete the data packet transmission. Simulation experiments showed that compared to the existing geographical routing algorithm, GHTGR is able to correctly find data forwarding path, effectively reduce energy consumption and improve the network transport performance.

Keywords: Geographic routing; Convex Hull; Hull tree; Greedy Forwarding Rule

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