Abstract

In this paper, we discuss the energy efficient multicast problem in ad hoc wireless networks. The problem of our concern is: given an ad hoc wireless network and a multicast request, to find a multicast tree such that the total energy cost of the multicast tree is minimized. Each node in the network is assumed to have a fixed level of transmission power. We first prove the problem is NP-hard, and then propose three heuristic algorithms, namely Steiner tree based heuristic, Node-Join-Tree and Tree-Join-Tree greedy algorithms. Extensive simulations have been conducted and the results have demonstrated the efficiency of the proposed algorithms.
Multicast Routing with Minimum Energy Cost in Ad Hoc Wireless Networks

References


Index Terms

Computer Science

Engineering and Technology
Keywords
Minimum energy cost  Multicast tree  Total energy cost  Transmission range  Greedy algorithm