Network Connectivity based Topology Control for Mobile Ad hoc Networks

International Journal of Computer Applications
© 2012 by IJCA Journal

Volume 56 - Number 2
Year of Publication: 2012

Authors:
T. S. Asha
N. J. R. Muniraj

Abstract

Energy consumption and network connectivity are two of the important research issues that are yet to be resolved in mobile ad hoc networks (MANETs). However, only a few topology control methods (e.g. [1]) take into account the low interference as a goal of the methods. Some researchers tried to indirectly reduce the interference by reducing the transmission power or by devising low degree topologies, but none of those protocols can guarantee low interference. In this research work, we propose Network Connectivity based Topology Control (NCTC) to make the correct the balance between interference and energy in order to improve the network lifetime of networks. It consists of two phases. In first phase, the reduction of interference is achieved. In second phase, efficient topology control based on energy constraint is proposed to extend the network lifetime of networks. By using the extensive simulation results using Network Simulator (NS2), the proposed scheme NCTC achieves better network lifetime, packet delivery ratio, less overhead and end to end delay than the existing schemes.

References

Network Connectivity based Topology Control for Mobile Ad hoc Networks


Index Terms

Computer Science
Wireless
Keywords

MANET  Interference  network connectivity  network lifetime  packet delivery ratio

end to end delay

overhead