Integration of Load Balancing mechanisms into routing protocols has elicited significant interest to alleviate congestion and improve the performance of on-demand routing protocols. For the sustained network functionality, load balancing mechanisms need to compute energy efficient paths with lesser traffic. Further severe degradation of network performance is observed due to intense traffic activity of the neighboring nodes. In this paper, we propose a load balancing mechanism that is also energy efficient by considering potential traffic interference caused to neighboring nodes that influence the load of an existing flow. Our proposed work (ELB-MRP) formulates a combined traffic and energy cost to optimize upon the routing mechanism by encompassing interference caused due to neighbor effect into routing decisions along with energy conservation. Simulation studies show significant improvement in the performance of the network.
A Load Aware Routing Mechanism for Improving Energy Efficiency in Mobile Ad Hoc Networks

Reference

- Meng Li, Lin Zhang1, Victor O. K. Li, Xiuming Shan, Yong Ren, “An Energy-Aware Multipath Routing Protocol for Mobile Ad Hoc Networks” ACM Sigcomm Asia’05, Apr. 10-12, 2005, Beijing, China
- The NS-2 Simulator, http://www.isi.edu/nsnam/
- http://www.isi.edu/ilense/software/smac/ns2_energy.html

Index Terms

Computer Science Wireless
Key words
Multipath AODV          Energy aware Routing          Load balancing