

Performance Evaluation of Hierarchical Clustering Protocols in WSN Using MATLAB

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Abstract

To improve the lifespan of WSN (wireless sensor networks), efficient optimization of network resources is necessary. Optimizing the network's energy utilization is the most important issue which is being addressed by most of the researchers these days. Depending on the structure, WSNs are divided into flat WSN and hierarchical or clustered WSN. In energy optimization for large-scale WSN, clustering proved an effective approach. Many researchers proposed many clustering protocols to date. Based on the energy associated with the sensor nodes, researchers divided networks into two categories: homogeneous networks and heterogeneous networks. In this paper, we tested LEACH protocol in a homogeneous environment and heterogeneous environment, centralized LEACH, SEP, DEEC, and developed DEEC protocols under different scenarios such as change in the sink position and change in