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An Energy Aware Optimal Routing Mechanism for Wireless Sensor Network Energy and Latency Minimization

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Abstract: *Several real life applications in wireless networks as well as IoT rely on routing of wireless sensor networks. However, they face the invariable challenge of limited energy resources which makes it critical to design data transfer mechanisms which utilize the available energy in a manner to increase the networks lifetime and reduce the latency of the system. Effective clustering and energy management can increase the lifespan of the network while reducing the delay incurred simultaneously. In the proposed work, a two tier approach for minimizing redundant transmissions has been proposed in conjugation with the particle swarm optimization (PSO), which tries to minimize the intra cluster distances to minimize the latency and energy consumption too. The evaluation parameters for the proposed approach are the one hop delay, network delay and energy consumption. This heuristic approach has been used to find the best fitness function to optimize both the network lifetime as well as the latency.*

Keywords: Wireless Sensor Network (WSN), Network Lifetime, Clustering, One hop delay, network delay, two tier approach, PSO

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