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Energy-efficient and multi-stage clustering algorithm in wireless sensor networks using cellular lear

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Abstract

One of the main challenges in wireless sensor networks is the energy constraints of sensor nodes wh considered precisely when designing algorithms for such networks. Clustering is known as one of th can be used for addressing this challenge. In this paper, an efficient method for clustering wireless se means of cellular learning automata has been presented (LaClustering). Proposed method selects clu through several stages; each considers one parameter affecting the overall performance of the cluste considered in different stages of the proposed algorithm are energy levels of the sensor nodes, numb each node, network connectivity, and formation of balanced clusters. To evaluate the performance o method, several experiments have been conducted using the J-sim simulator and the proposed metho with some of the best clustering algorithms reported in literature. The simulation results have shown