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## An Energy-Efficient Coverage aware Clustering Mechanism for Wireless Sensor Networks

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**Abstract:** Optimization of energy consumption operations is crucial to prolong WSN lifetime. Conversely, coverage is another important issue which focuses on how to cover all points in field of interest. Generally, there is a tradeoff between these two factors. If the mechanism in WSN clustering focuses on the energy constraints, it will not concentrate on coverage, and vice-versa. In this paper, we propose an Energy Efficient Coverage-aware Clustering mechanism (EECC), balancing between the coverage ratios and energy levels by ensuring maximum coverage with optimum lifetime, which is accomplished by selecting cluster heads based on their remaining energies. A sensor with higher remaining energy has a greater likelihood to be a cluster head sensor, while other sensors with lower remaining energy put themselves into a sleep state. After the selection process, the clusters will be formulated, and consequently, each non-cluster head sensor will be assigned to one of the cluster head sensors.