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Multimode clustering model for hierarchical wireless sensor networks

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Highlights

- A multi-mode clustering model (M^2CM) is proposed to maintain the clusters for hierarchical WSNs.
- The M^2CM is proposed based on the local and event-trigger operations.
- An adaptive local maintenance algorithm is designed for the broken clusters in the WSNs using the spatial-temporal demand changes.
- Numerical experiments are performed using the NS2 network simulation platform.
- Results validate the effectiveness of the proposed model with respect to the network maintenance costs, node energy consumption and transmitted data as well as the network lifetime.