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CDS-Based Energy Efficient Topology Control Algorithm in Wireless Sensor Networks

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Abstract: *Wireless Sensor Networks (WSNs) is a distributed wireless network which consists of a large number of sensors that collects the data in a various environment. The sensors work on battery that has a limited lifetime due to which the data in WSNs is not transmitted completely, so that it is a challenge to create an energy efficient routing protocol that can reduce the energy consumption and interference in the network graph and thereby extend the network lifetime. For saving energy and extending network lifetime the topology is a well-known technique in WSNs and the widely used topology control strategy is the construction of Connected Dominating Set (CDS). In this paper, we construct a CDS based energy efficient topology control algorithm i.e. GCDSTC for WSNs. The simulation results indicate that the GCDSTC algorithm reduce the energy consumption and interference in the network graph, in order to enhance the network lifetime.*

Keywords: *Wireless Sensor Network (WSN), Connected Dominating Set (CDS), Topology Control (TC), etc.*