عنوان مقاله:

Effect of Deployment on LEACH-ICA Combination Algorithm for better Routing Performance in WSN

محل انتشار:

سومین کنفرانس سراسری نوآوری های اخیر در مهندسی برق و کامپیوتر (سال: 1395)

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خلاصه مقاله:

One of the most import challenges in WSNs is routing due to the presence of hundreds or thousands of sensor nodes. Low Energy Adaptive Clustering Hierarchy (LEACH) is a hierarchical routing and data dissemination protocol. Sensor nodes send data-packets over long distances. Imperialist Competitive Algorithm (ICA) is an optimization algorithm inspired by social phenomenon. It considers colonization process as a stage of socio-political evolution. Empowering LEACH with ICA (LEACH-ICA combination) helps determine best CH location, conserve energy significantly, and maintain the network connectivity and decrease data-packets loss. It can significantly increase the network lifetime compared with LEACH algorithm. We study the effect of deployment on LEACH-ICA combination in term of Some WSN parameters. We conclude the LEACH-ICA combination has better efficiency in terms of cluster overlapping, radio interference, operation energy, CHs and ACSs consumed energy, number of ACSs out of range, number of CHs without any member, number of CHs overloaded, total number of data-packets communication in the network, average amount of data-packets per cluster with grid deployment compared to the network with random deployment.

کلمات کلیدی:

WSN, Routing, ICA, Cluster Head, Active Sensor

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