



Fuzzy Logic based Clustering Approach in Heterogeneous and Homogeneous Wireless Sensor Networks

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Abstract – Sensor nodes in WSN are powered with a battery. Sensor nodes consume the battery power mainly in the tasks like data transmission, data reception and sensing. Sometimes it is impractical to replace a battery in WSN because humans can't reach. Therefore once energy or computational resources are consumed, immediate recovery of these resources is a complex task so it is necessary to make use of battery power efficiently to increase the lifetime of the sensor nodes that will also increase the lifetime of the whole network. To make WSN energy efficient and to increase the lifetime of the network we design a Fuzzy Logic based clustering approach in heterogeneous environment so as to find a method which increases the lifetime and reduces the energy consumption of the network. The execution and demonstration of this paper is performed with the help of MATLAB 2014a. The performance comparison metrics are; network lifetime, network throughput and the number of alive nodes.

Keywords – Fuzzy Logic, GPS, LEACH, WSN.