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## Abstract

With the drastic growth of Internet and VLSI design, applications of WSNs are increasing tremendously that ranges from environmental monitoring, habitat monitoring, traffic surveillance to battle fields. In WSN a number of tiny sensor nodes managed by small batteries are deployed in a hostile environment to monitor the physical parameters. During transmission, the sensor nodes consume considerable amount of energy. There are many constraints on these sensor nodes such as limited memory, limited battery power, and limited processing capability. Moreover, these factors impose a restricted lifetime for the entire network. When sensor nodes send the information to the base station (BS), routing protocol plays the key role to deliver the information at the destination. Low Energy Adaptive Clustering Hierarchy (LEACH) and LEACH-C is the well-known distributed and centralized clustering routing protocol respectively. In LEACH, the cluster head (CH) is elected on a probabilistic threshold value on a rotation basis and only CHs are allowed to send the information to the BS. LEACH-C is the modified version of LEACH and works on the centralized principle. Further, WSNs are vulnerable to many types of attacks, as WSNs are normally deployed in a harsh environment. So, security is one of the major challenging issues that need to be focused. Many researchers have addressed these

issues on LEACH protocol as LEACH is the first ever cluster based routing protocol. As far as our knowledge is concerned, there is a lack of research in the current literature by considering both LEACH and LEACH-C protocol under some attacks. So, we have made an attempt to analyze the performance of both the protocols under some well-known attacks like black hole and sink hole attacks. Again, we plan to propose a detection mechanism which is in progress.

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### Index Terms

Computer Science

Networks

**Keywords**

LEACH LEACH-C Black hole Sink hole NetSim Simulator