Abstract

In a Wireless Sensor Network (WSN) accurate location of target node is highly desirable as it has strong impact on overall performance of the WSN. This paper proposes the application of different migration variants of Biogeography-Based Optimization (BBO) algorithm and Particle Swarm Optimization (PSO) for distributed optimal localization of randomly deployed sensors for different ranges. Biogeography is collective learning of geographical allotment of biological organisms. BBO has a new inclusive vigor based on the science of biogeography and employs migration operator to share information between different habitats, i.e., problem solution. PSO models have only fast convergence but less mature. An investigation on distributed iterative localization is presented in this paper that shows how time consumption and error varies for different ranges. Here the nodes that get localized in iteration act as anchor node. A comparison of the performance of PSO and different migration variants of BBO in terms of number of nodes localized, localization accuracy and computation time is presented.

References
Analysis of Different Ranges for Wireless Sensor Node Localization using PSO and BBO and its variants


**Index Terms**

Computer Science

Wireless
Keywords

Particle Swarm Optimization  Biogeography Based Optimization  Enhanced BBO
Immigration Refusal
Blended BBO
Localization
Wireless Sensor Networks