Abstract

The recent increasing threat of radiological weapons technologies has highlighted the need for superior detection of hazardous emission sources. One promising area of technological development is radiation source detection using tracing mobile robot. In this paper, a novel algorithm based on GA is proposed for localization problem of such dangerous source using single robot. In which, if the estimated source location is gathered, the algorithm process is being terminated. The adaptive GA based on fuzzy logic is also introduced for comparison.
Simulation results indicate that the proposed adaptive genetic algorithm have a better performance and faster than GA. In addition, the paper presents an investigation of radiation source localization by addressing the explanation of two novel algorithms that are assumed when considering group of autonomous mobile robots system.

References

- Cheng Xiang-jin, Shi Yi-kai, Yang Ning, and Huang Lei, "Design of radiation detection system with WSN\"; Cross Strait Quad-Regional Radio Science and Wireless Technology Conference (CSQRWC), 26-30 July 2011, 946-949.
Radiation Source Localization based Genetic and Fuzzy Agents using Robotics Wireless Sensor Networks


Index Terms

Computer Science Wireless

Keywords

Keywords are your own designated keywords which can be used for easy location of the manuscript using any search engines.