



Wireless Sensor Networks : Distributed Event Detection and Localization

By Michalis Michaelides

LAP Lambert Academic Publishing Feb 2013, 2013. Taschenbuch. Condition: Neu. This item is printed on demand - Print on Demand Neuware - This book focuses on distributed event detection and localization in Wireless Sensor Networks (WSNs). Sensor nodes are usually small, simple and cheap devices, each equipped with a processor, radio transceiver and sensing probe, and powered by a battery. A WSN consists of a large number of such nodes that form an ad-hoc network in order to deliver the sensed data to the user. One of the common applications envisioned for WSNs is that of monitoring a large region for the presence of an event source that releases a certain signal or substance in the environment. The main objective of this dissertation is to detect and localize the event from the spatially distributed information provided by the sensor nodes in a simple, localized and fault tolerant manner. For the problem of distributed detection, this dissertation proposes novel detection algorithms that exploit the spatial correlation between the measurements of sensor nodes in close proximity in order to improve the overall coverage of the sensor network. For the problem of distributed localization, this dissertation proposes algorithms that feature accuracy and robustness...



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