

Abstract: A Localization Algorithm of Multi-hop Three Dimensional AOA with Space-based Angle Transmission and Its Application

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Abstract

Wireless sensor node's localization is a fundamental technology in Wireless Sensor Networks. There are only quite a few studies on three-dimensional localization which is suffered in slow progress, actually, is one of the main difficulties in WSN localization. Based on the study of the existing two-dimensional positioning algorithm and the application of terrain modeling, localization algorithm for sensor nodes in three-dimensional condition has been focus on as well as the application of terrain model. Using the idea proposed by representative algorithm--APS multi-hop AOA (Angle of Arrival), this paper proposed a new algorithm named Multi-hop Three Dimensional AOA With Space-based Angle Transmission (MSAT3D AOA). Using this technology, target nodes can use information of anchor nodes which are more than one hop away form. This paper also combined MSAT3D AOA algorithm with Delaunay triangulation algorithm for terrain modeling.

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