

## عنوان مقاله:

Localization of Underwater Wireless Sensor Network Nodes Using Cuckoo Optimization Algorithm

## محل انتشار:

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## خلاصه مقاله:

Underwater Wireless Sensor Networks (UWSNs) are considered as wireless sensor networks whose main task is to sense underwater events and send information to the base station. This information becomes valuable when the exact location of the occurrence is known. Generally, underwater sensor nodes are not equipped with devices such as the Global Position System (GPS) with the purpose of reducing network costs. Therefore, finding the location of the nodes should be done using another exact method. In this paper, we intend to find the location of the underwater sensor nodes by introducing a new method based on the Cuckoo Optimization Algorithm (COA). In this method, first, the sensor nodes determine their communication range and distance from three reference nodes by the Time of Arrival (TOA) method, and then estimate their location by implementing the COA algorithm. We will compare the proposed method with the Particle Swarm Optimization (PSO) and Immune Particle Swarm Optimization (IPSO) algorithms, and also the triangular method in terms of the localization error rate and the number of nodes discovered. The results of the comparisons show that the proposed method can greatly reduce the error rate of the localization of the sensor nodes. Also, in the proposed method, the number of nodes discovered has also been improved by the technique of becoming a secondary reference. Results suggest that the proposed method is less sensitive to noise compared with other algorithms.

## کلمات کلیدی:

localization Sensor, Underwater Wireless Sensor Networks, Cuckoo Optimization Algorithm, Triangular Method

## لینک ثابت مقاله در پایگاه سیویلیکا:

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