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## Distributed QoS routing algorithm in large scale Wireless Sensor Networks

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**Author(s):** Kordafshari, Mohammad Sadegh

Department of Computer Engineering, Science And Research

Branch, Islamic Azad University (IAU), Tehran, Iran

Pourkabirian, Azadeh ; Meybodi, Mohammad Reza ; Movaghar, Ali

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### ABSTRACT

This paper presents a novel routing protocol based on the Learning Automata method for large scale Wireless Sensor Networks (WSNs) codenamed DRLR (distributed reinforcement learning routing). In this method, each node is equipped with learning automata so that it can learn the best path to transmit data toward the destination. The approach proved to be efficient, reliable, and scalable. It also prevents routing hole by considering the current and average of energy levels available. The approach also increases network lifetime by balancing energy consumption. We compared our approach to two other methods (MMSPEED and EESPEED) and the results show our algorithm to better meet end-to-end delay and reliability requirements and to improve network lifetime more.

### INDEX TERMS

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Delay , Learning automata , Reliability , Routing , Routing protocols , Silicon , Wireless sensor network

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