A Study on Game Theory Approaches for Wireless Sensor Networks

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Abstract : Game Theory approaches and their application in improving the performance of Wireless Sensor Networks (WSNs) are discussed in this paper. The mathematical modeling and analysis of WSNs may have low success rate due to the complexity of topology, modeling, link quality, etc. However, Game Theory is a field, which can efficiently use to analyze the WSNs. Game Theory is related to applied mathematics that describes and analyzes interactive decision situations. Game theory has the ability to model independent, individual decision makers whose actions affect the surrounding decision makers. The outcome of complex interactions among rational entities can be predicted by a set of analytical tools. However, the rationality demands a stringent observance to a strategy based on measured of perceived results. Researchers are adopting game theory approaches to model and analyze leading wireless communication networking issues, which includes QoS, power control, resource sharing, etc.

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