Adaptive Multipath Key Reinforcement for Energy Harvesting Wireless Sensor Networks - DTU Orbit (16/01/2019)

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Energy Harvesting - Wireless Sensor Networks (EH-WSNs) constitute systems of networked sensing nodes that are capable of extracting energy from the environment and that use the harvested energy to operate in a sustainable state. Sustainability, seen as design goal, has a significant impact on the design of the security protocols for such networks, as the nodes have to adapt and optimize their behaviour according to the available energy. Traditional key management schemes do not take energy into account, making them not suitable for EH-WSNs. In this paper we propose a new multipath key reinforcement scheme specifically designed for EH-WSNs. The proposed scheme allows each node to take into consideration and adapt to the amount of energy available in the system. In particular, we present two approaches, one static and one fully dynamic, and we discuss some experimental results.

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