

**Optimization problems for WSNs: trade-off between synchronization errors  
and energy consumption**

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Abstract

We discuss a class of optimization problems related with stochastic models of wireless sensor networks (WSNs). The goal is to minimize a cost functional which accumulates synchronization errors and energy consumption over a given time interval.

We show that optimal solutions for such models can contain singular arcs. We discuss possible algorithms of numerical solutions of these optimal control problems.