# Mobile Sink Scheduling Method for Wireless Sensor Networks under Travel Time Uncertainty

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Abstract—In Wireless Sensor Networks (WSN), timely data collection is an important requirement for the success of the applications. On the other hand, sensor nodes have limited resources, such as battery power and memory capacity which limits their direct participation to data collection process. Therefore, to collect sensory data efficiently, well-designed techniques are to be developed. One of the proposed techniques is to employ mobile sinks (MS) to decrease the energy consumption at sensor nodes spent in forwarding data packages. In this method, MS is scheduled such that it arrive sensor nodes before their memory gets full and overflows. For a successful schedule, the crucial information is the travelling time between sensor nodes in the field. In most cases, it is assumed that the travelling time is known a priori and remains the same all the time. However, in reality, due to various reasons, travelling times can change in course of time and, hence, the planned schedule may not produce the desired output. In this study, we propose an improved scheduling method considering uncertainty in travelling time. Simulation experiments justify the expected success of the proposed method.

Index Terms— Wireless Sensor Networks, mobile sinks, scheduling, data collection, uncertainty.
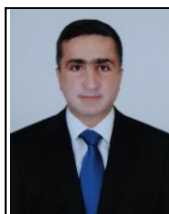
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