

CLUSTER RESTRUCTURING FOR TRANSMISSION EFFICIENT WSN

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ABSTRACT

Wireless sensor network (WSN) comprises of low cost, large number of small sized resource constrained sensor nodes collecting and transmitting data through multi-hop transmission. In WSN we can view data gathering as a partial realization of spatial process. We observe the data at finite number of locations and the goal is to infer properties of the spatial process which generated the data and to predict the process at unobserved sites. If spatial correlation is present resources are wasted. Due to dense deployment nodes are spatially correlated. If application is long term monitoring then temporal correlation arises. Due to temporal correlation data collected at regular interval vary in a similar way. Both the correlated situations should be avoided. Correlated information lends itself to some form of compression that removes or reduces redundancy. Spatial correlation manifests itself in overall less transmission and temporal correlation manifests less data in each transmission. Limited capability of sensing, processing, communicating and battery operated nature of sensor nodes call for advanced hardware and software solution implementation of the correlated scenario.

KEYWORDS: Wireless Sensor Network (WSN), Compressive Sensing (CS)