Summary: In order to improve energy-effectiveness in wireless sensor network, in practice some sensors in observation points are selected not to gather data. In this case, the insufficient data gathered by the rest of sensors have to cover the total network so that the complete information of the whole environment could be estimated rationally, which is similar to compressive sensing. However, the process of estimation has to cost a lot of energy, which is a crucial problem. This paper proposes a practical and effective information coverage approach in which an actual constrained condition is considered for consensus estimation to reduce unnecessary energy cost reasonably. In our experiments, the method has been proved valuable and feasible.

Keywords: combinatorial problems; information coverage; consensus; estimation; compressive sensing; wireless sensor network
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