

A FIX-POINT ITERATIVE ALGORITHM FOR ESTIMATION IN THE COMMUNICATION CONSTRAINED SENSOR NETWORK

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Abstract. The problems on the estimations in communication constrained networks have attracted considerable attentions in recent years. In such networks, the estimator shows a poor performance due to the less transmissions, compared with the Linear Minimum Variance Estimator(LMVE). In this paper, a new method is proposed to obtain a better estimator with respect to unbounded noises. According to our proposal, optimal local sensor compress rules can be derived from the noise distributions. It follows that the fusion center can generate the final estimator by combining the information transmitted from all the sensors. Finally, two numerical examples are implemented to illustrate the performance of our new estimator.

Keywords. Communication constrained network, Decision fusion, Local sensor rule, Optimal estimation, LMVE.

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