

SESSION 3.2 - SENSOR NETWORKS

Invited speech - DISTRIBUTED ESTIMATION BASED ON MULTI-HOP SUBSPACE DECOMPOSITION

This paper deals with the problem of distributedly estimating the state of an LTI plant through an interconnected network of agents. The proposed approach results in an observable structure that incorporates consensus among the agents and that can be distributedly designed, achieving a robust solution with a good estimation performance. The developed solution is based on an iterative decomposition of the plant in the local observable staircase forms. The proposed observer has several positive features compared to recent results in the literature, which include milder assumptions on the network connectivity and the ability to set the convergence rate.

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