Open Thesis (SA,MA)

Sensor networks under Switching Topology

Description:
Distributed control and estimation has evolved to one of the major areas of modern control theory and applications. A distributed estimation algorithm is relevant in the case of a sensor network, when several agents measure a system from different perspectives, but none of them can obtain a full estimate of the system on their own. Cooperation between the agents is needed here, which can be done with communication connections. In a real world setup, however, connections between the agents may be lost and re-established over time. This adds additional difficulties to the analysis of the respective network. The goal of this thesis project is to analyze switching interconnection graphs and to synthesize distributed estimation laws that ensure the estimation to converge correctly.

Prerequisites:
- Courses: Konzepte der Regelungstechnik (beneficial: Analysis and Control of Multi-Agent Systems, Robust Control)

Supervisor:
Jingbo Wu
Room 2.227

Area:
Distributed Control

Properties:
Type: SA,MA
30% literature
55% theoretical work
15% simulation

Beginning:
anytime

Weitere Informationen: www.ist.uni-stuttgart.de/education/sada

Aushang vom 15. Juli 2015