GRADUATE SCHOOL
computational engineering

TECHNISCHE UNIVERSITÄT DARMSTADT

Subject: Robust Communication Systems

Research Focus/ Cross-sectional Area: Communication systems (R9)

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Description:

A realistic consideration of modern communication systems must cover heterogeneous sensor networks, where communication nodes have different capabilities and limited battery power, memory, processing capability and communication bandwidth. Therewith, erroneous, noisy and incomplete data is created which leads to a performance loss when using classical methods. Furthermore, sensors are placed in a harsh, unknown, and dynamic environment. Difficulties can be contributed to e.g., the large scale and high density of wireless sensor networks, dynamic topologies with real-time constraints and uncertainty about network state information.

Research aims are to develop robust methods that work, even in difficult scenarios and under realistic assumptions in order to ensure robustness within the network.

Requirements:

Good foundation in digital signal processing and statistics.

Supervisors: A. Zoubir, Signal Processing
S. Ulbrich, Nonlinear Optimization and Optimal Control