

SICE 北陸支部 講演会

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Communication-Induced Challenges in Networked Dynamical Systems

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Abstract:

Communication networks play an important role in the realization of modern control systems. The communication characteristic has a significant influence on the stability and performance of dynamical systems connected over a communication network. Crucial parameters are the communication time delay, the packet loss, and the interconnection topology. Examples for such systems are telepresence systems and networked cooperating robots. This talk gives an overview on the communication induced challenges in networked dynamical systems. In the first part of the presentation, the stability and performance problem of haptic (force-feedback) telepresence systems is considered. In the second part, conditions in terms of the interconnection topology for the output synchronization of dissipative multi-agent systems are derived.

About the Speaker:

Dr.-Ing. Sandra Hirche graduated in Aeronautical and Space Engineering from the Technical University of Berlin in 2002 and received the PhD degree from the Technische Universität München in 2005. Since 2005 she is a JSPS Postdoctoral researcher at Tokyo Institute of Technology. Her research interest include human-machine systems, teleoperation, multi-agent systems, networked control systems, time delay systems, hybrid dynamical systems, mechatronics, human perception and control.



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