



DSSC SEMINAR

You are cordially invited to the DSSC seminar on
 1 November 2016, 16.00-17.00, Bernoulliborg, room 5161.0105

The Role of Automatic Control for Industry 4.0

Speaker: Prof. Dr. Ing. Frank Allgöwer
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Abstract

With the vision of the smart factory of the future, generally termed Industry 4.0, the manufacturing industries are currently undergoing a fundamental new orientation on the basis of the Cyber-Physical Systems and Internet of Things and Services paradigms. All parts along the manufacturing chain are nowadays equipped with embedded computing, communication and networking capabilities and are expected to interact in an optimal way towards the goal of an energy and resource efficient, save and reliable production process. Through decentralized optimal decision-making and an appropriate communication among the networked individual parts, the whole production process of the future is expected to operate optimally. In this presentation the challenges and opportunities of Industry 4.0 for the field of automatic control are discussed. We will in particular investigate the potential impact of networked and optimization-based control for the fourth industrial revolution and will argue that some new developments in the control field, especially connected to distributed and economic model predictive control, appear to be ideally suited to have an important impact in the new Industry 4.0 environment.

Biography

Frank Allgöwer is director of the Institute for Systems Theory and Automatic Control and professor in Mechanical Engineering at the University of Stuttgart. He studied Engineering Cybernetics and Applied Mathematics at the University of Stuttgart and the University of California at Los Angeles respectively and he received his Ph.D. degree in Engineering Cybernetics also from the University of Stuttgart. Prior to his present appointment he held an assistant professorship in the electrical engineering department at ETH Zurich. In addition he held visiting positions at the California Institute of Technology, the NASA Ames Research Center, the DuPont Company, the University of California at Santa Barbara and the University of Newcastle, Australia. Frank's main interests in research and teaching are in the area of systems and control with a current emphasis on the development of new methods for optimization-based control, networks of systems and systems biology. Frank received several recognitions for his work including the IFAC Outstanding Service Award, the IEEE CSS Distinguished member Award, the State Teaching Award of the state of Baden-Württemberg, and the Leibniz Prize of the Deutsche Forschungsgemeinschaft. Frank served as IEEE CSS Vice-President for Technical Activities over the last years and is President-elect of the International Federation of Automatic Control. He was Editor for the journal Automatica from 2001 to 2015 and is editor for the Springer Lecture Notes in Control and Information Science book series and has published over 500 scientific articles. Since 2012 Frank serves as Vice-President of the German Research Foundation (DFG).

Rank	Word	Frequency
1	時	0.191925
2	時時	0.216155
3	國	0.219850
4	無	0.221276
5	風	0.221635
6	風風	0.224884
7	陽	0.237366
8	後	0.245208
9	處	0.246870
10	數	0.247783
11	數數	0.252506
12	雲	0.253300

