

MAGDEBURG LECTURES ON OPTIMIZATION AND CONTROL



MAGdeburg Lectures on Optimization and Control

Prof. Dr. Jacquelyn Scherpen
University of Groningen

**Optimal control, optimisation,
market mechanisms and physics of
smart energy systems**

Di. 23.01.2018 17:00 MPI Großer Saal 'Prigogine'

Further information:
www.maioc.mpg.de

jointly organized by: Faculty of Electrical Engineering and Information Technology
Faculty of Mathematics
Max Planck Institute Magdeburg
Center for Dynamic Systems: Biosystems Engineering

CDS **EIT** **MATH**

09.01.2018 - **Optimal control, optimisation, market mechanisms and physics of smart energy systems**

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Time & Place

The presentation on January 23, 2018 will be given in the ›Max Planck Institute Magdeburg (<http://www.mpi-magdeburg.mpg.de/>) , Großer Seminarraum 'Prigogine' and starts at 5.00 p.m..

Abstract

In this talk I will first give a combined distributed, hierarchical optimal control perspective using dual decomposition and pricing mechanisms for smart energy systems, and in particular for household prosumers (consumers and producers). In this setup a possible future (EU) market structure is taken into account. Furthermore, I will take a second perspective from the physics, where stabilisation is important,

and optimisation is done on the welfare function. Some questions about the coupling of these two perspectives are raised.