

STREP Project 223854 HD-MPC

Bart De Schutter

Closing of the HD-MPC workshop

Milan, Italy, August 28, 2011



- Website of HD-MPC project: <http://www.ict-hd-mpc.eu>
- Slides of this workshop:
http://www.ict-hd-mpc.eu/index.php?page=ifac_workshop
or via HD-MPC website → Events



Two special sessions on HD-MPC organized by Bart De Schutter and Alfredo Núñez:

- MoA12 (10.00–12.00): Hierarchical and Distributed Model Predictive Control – I. Fundamentals
- MoB12 (13.30–15.30): Hierarchical and Distributed Model Predictive Control – II. Applications
- Room: Vito
- Presenters from HD-MPC and other FP7 EU projects (WIDE, HYCON2, Embocon, MoVeS)



- Feasible-cooperation distributed model predictive control scheme based on game theory
by Valencia, Espinosa, De Schutter, Staňková
- A dual decomposition-based optimization method with guaranteed primal feasibility for hierarchical MPC problems
by Doan, Keviczky, De Schutter
- Distributed model-predictive control driven by simultaneous derivation of prices and resources
by Scheu and Marquardt
- Distributed non-cooperative MPC with neighbor-to-neighbor communication
by Farina and Scattolini
- Adjoint-based distributed multiple shooting for large-scale systems
by Savorgnan, Kozma, Andersson, Diehl
- Distributed model predictive control and estimation of large-scale multi-rate systems
by Roshany-Yamchi, Negenborn, Cychowski, Connell, Delaney



- Distributed MPC for multi-zone temperature regulation with coupled constraints
by Moroşan, Bourdais, Dumur, Buisson
- Coordination of a multiple link HVDC system using local communications based distributed model predictive control
by Mc Namara, Negenborn, De Schutter, Lightbody
- Hierarchical control with prioritized MPC for conflict resolution in air traffic control
by Chaloulos, Hokayem, Lygeros
- Fixed-profile load scheduling for large-scale irrigation channels
by Li and De Schutter
- Decentralised MPC based on a graph partitioning approach applied to the Barcelona drinking water network
by Ocampo-Martinez, Puig, Bovo
- Cooperative distributed MPC for tracking
by Ferramosca, Limón, Rawlings, Camacho



- Special Issue on Hierarchical and Distributed Model Predictive Control
- Journal of Process Control, Volume 21, Issue 5 (2011), pages 683–816
- Currently 2 papers in top-10 of most downloaded papers:
 - A comparative analysis of distributed MPC techniques applied to the HD-MPC four-tank benchmark by Alvarado et al.
 - Decentralized model predictive control of dynamically coupled linear systems by Alessio et al.



- ADHS'12: 4th IFAC Conference on Analysis and Design of Hybrid Systems
- Eindhoven, The Netherlands, June 6–8, 2012
- Topics:
 - modeling, simulation, analysis, verification, and control of hybrid systems
 - applications in networked control systems, large-scale process industries, transportation systems, energy distribution networks, communication networks, etc.
- URL: www.adhs12.org
- Submission deadline: Nov. 15, 2011

