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Main Sponsor:

TC 2.4 - Optimal Control

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TC 2.3 - Nonlinear Control Systems

NMPC 2024



Background and Scope:

Model predictive control (MPC) is indisputably one of the advanced control techniques that have significantly affected control engineering practice with thousands of controllers implemented in various fields, spanning from the process industry to automotive and robotics. This is due to its unique ability to handle constraints, take preview information about disturbances and setpoint changes into account, and optimize performance. Furthermore, MPC allows the consideration of various types of dynamics, from linear to nonlinear, discrete to continuous, as well as an online adaptation of models and parameters. The research community on MPC is very active, with hundreds of papers published every year. Over the past decades, many theoretical, as well as implementation results, have been achieved.

Topics:

NMPC2024 covers a wide range of research directions in control theory and applications.

The topics of interest include the following, but are not limited to:

- New frontiers in nonlinear model predictive control
- Stability and recursive feasibility of nonlinear model predictive control
- Predictive control and IoT
- Application of model predictive control in Industry 4.0
- Nonlinear model predictive control on embedded platforms
- Machine learning enabled MPC
- Model predictive control for complex systems
- Model predictive control for systems with distributed parameters
- Model predictive control in automotive domain
- Model predictive control for aeronautic applications
- Model predictive control of mechatronic systems
- Heating, ventilation, air conditioning (HVAC) control
- Model predictive control in medicine applications
- Model predictive control in biotechnology
- Model predictive control in process control

Venue:

Clock Tower Centennial Hall

Kyoto University Main Campus

Yoshida-honmachi, Sakyo-ku Kyoto-shi, Kyoto, 606-8501, Japan

Important Dates:

Initial Paper Submission Deadline: December 18, 2023

Notification for Acceptance: TBD

Final Paper Submission Deadline: TBD

Registration Deadline: TBD

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The venue and schedule are subject to change depending on the COVID-19 pandemic and other circumstances.