Journal of Control Science and Engineering

Hindawi

Special Issue on

Advances in Model Predictive Control and Applications to Processes and Moving Bodies

CALL FOR PAPERS

Model predictive control (MPC) early addressed to linear systems has been a hot subject studied for four decades in the control academic and industrial communities. MPC for linear multivariable systems is an alternative to multivariable control methods succeeding decoupling of the system dynamics. The objective of minimization of the tracking error for the system state variables has to be balanced with the objective of achieving satisfactory results or requires an empirical tuning of the weight coefficient of the MPC controller. These are open and challenging research topics. Specially, MPC has attracted widespread attention for process control and recently motion control. Constructing more efficient MPC schemes of nonlinear systems and designing numerical methods of MPC are the main challenges of MPC applications.

In recent years, some new advances in MPC theory and applications have been achieved with the developments of mathematical methods, stability theory, performance analysis, and so forth. The Editors of this journal are pleased to launch this new special issue.

This special issue is intended to present and discuss breakthrough technological advances in MPC which are expected to promote the investigation of more promising MPC technology and its successful applications.

Potential topics include, but are not limited to:

- Robustness of linear MPC to model uncertainty
- Performance optimization of linear and nonlinear MPC
- Numerical methods of constrained nonlinear MPC
- Distributed, networked MPC of nonlinear systems
- Advances in stability of constrained nonlinear MPC
- Applications of MPC in process systems
- Applications of MPC in moving bodies

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Manuscript Due
Friday, 23 September 2016

First Round of Reviews
Friday, 16 December 2016

Publication Date
Friday, 10 February 2017