

SMC 2016

IEEE INTERNATIONAL CONFERENCE ON
SYSTEMS, MAN, AND CYBERNETICS
OCTOBER 9-12



<http://www.smc2016.org/>

Special Session Call for Papers SMC2016 Special Session on **Tensor Product Applications**

Special Session organizer

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Introduction/Call for Papers

The topic of the special session belongs to multi-objective control design based on the polytopic representation of quasi Linear Parameter Varying (qLPV) models and Linear Matrix Inequality (LMI) based optimization. The special session focuses on the Tensor Product (TP) model transformation that is capable of constructing and manipulating polytopic representations of given qLPV models, and can be applied generally without analytical intervention. It serves as a mathematical framework to determine the convex polytopic form of qLPV system models. Since the conservativeness of the solution and the resulting control performance are greatly influenced by the polytopic convex hull, therefore besides manipulating LMI's for controller design, which is the widely adopted approach, the TP model transformation based design focuses on the systematic modification of the polytopic convex hull. This key novelty has the potential to set forth a new direction in control system design.

Indicative Topics/Areas

The main aim of the special session is to summarize the state of the art results of this new design direction and to present new results of theoretical and practical aspects.

Topics of interest include, but are not limited to:

- Bridging various identification techniques to polytopic model based design via TP model transformation
- Control performance optimization based on the combination of convex hull manipulation and LMI based design
- Investigation of the TP model transformation based design in engineering problems
- Benchmarking various LMI techniques within the TP model-based control design methodology in terms of achievable control performance

The special session is submitted to Section:[C]

C: Cybernetics

Important Dates

April 15, 2016: Deadline for submission of full-length papers

May 25, 2016: Acceptance/Rejection Notification.

July 9, 2016: Final camera-ready papers due in electronic form.

Submission

Manuscripts for a Special Session should **NOT** be submitted in duplication to any other regular or special sessions and should be submitted to SMC2016 main conference online submission system on SMC2016 conference website.

All submitted papers of Special Sessions have to undergo the same review process (three completed reviews per paper). The technical reviewers for each Special Session paper will be members of the SMC2016 Program Committee and qualified peer-reviewers to be nominated by the Special Session organizers.