

# Linear Parameter Varying Systems: modelling, analysis, observation, control, diagnosis and applications

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## Abstract

The objective of this open invited track is stimulate the theoretical progress and wide range of applied studies of Linear Parameter Varying (LPV) methods from modelling and identification to control synthesis, fault diagnosis and observer design. The world congress would present a unique opportunity to bring together experts from various fields interested in LPV methods and create opportunity to share and exchange ideas for progressing the state-of-the-art.

The track is structured around key topics of

- LPV Modelling and Identification of nonlinear/time-varying system: How to obtain reliable LPV models of nonlinear systems, switching systems, time-delay system etc., based on first principle knowledge and measured data. How to accomplish modelling for utilisation objectives such as control or observer design and how to accomplish model reduction of existing large-scale LPV models.
- Analysis of LPV systems: in terms of stability and stabilization, robustness issues, geometric approaches, structural analysis. How these notions at the level of LPV systems can be interpreted for the original nonlinear/time-varying system captured by the LPV model?
- Controller and observer synthesis for LPV systems: Advances in optimal control, model predictive control, data-driven control like virtual reference feedback tuning, observer design.
- Fault Diagnosis and Fault-tolerant control of LPV systems: Recent progress in fault detection, fault estimation and fault-tolerant control in the LPV context.
- Applications: studies in automotive, aerospace, high-tech, robotic applications and in chemical processes, biological systems, energy networks, fusion and nuclear plants, network controlled-systems.

## Important Dates:

- (1) Abstract submission deadline: October 31, 2016
- (2) Notification of acceptance/rejection: February 20, 2017
- (3) Final paper submission deadline: March 31, 2017
- (4) IFAC World Congress: July 9-14, 2017.

Open Invited Track Submission Code: **biii1**

More details about the submission procedure can be found at:

<https://www.ifac2017.org/submit>

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