IEEE INTERNATIONAL CONFERENCE ON ADVANCED MOTION CONTROL (AMC 2026)

MARCH 9TH - MARCH 11TH, 2026

Daegu, Korea

Recent Advances and Applications of Robust Motion Control & Estimation

organized by

Gianluca Rizzello, Saarland University, gianluca.rizzello@uni-saarland.de

Paolo R. Massenio, Polytechnic University of Bari, paoloroberto.massenio@poliba.it

David Naso, Polytechnic University of Bari, david.naso@poliba.it

Michael Ruderman, University of Agder, michael.ruderman@uia.no

Call for Papers

The effectiveness of model-based control strongly relies on the availability of accurate mathematical models. While this is possible in various fields of engineering, some applications are unavoidably characterized by effects which are intrinsically hard, or even impossible, to model in an accurate way. Those include, for instance, soft transducers and robots undergoing changes in their material properties due to creep and environmental effects, or electric drives subjected to unpredictable load torques in real-life applications. Robust control approaches offer a means to achieve simple-to-implement closed-loop architectures with guaranteed stability and dynamic performance even in the presence of unmodeled dynamics and external disturbances.
This special session aims at discussing recent advances and applications of robust estimation and regulation approaches in motion control systems. Topics will cover various robust design methods and their application to emerging cases in high-precision mechatronics, soft robotics, and industrial drives. The special session will serve as a platform to exchange ideas and results from the recent state of the art.

Topics of the Session include, but are not limited to:

- o Robust observer-based control and estimation
- o H infinity control and filtering
- o LPV modeling, control, and estimation
- o Sliding mode control and estimation
- o Robustness to actuator/sensor against faults
- o Robust motion control of soft robots, soft actuators, and flexible structures

o Industrial applications of robust motion control methods

- **IEEE IES Technical Committee Sponsors (if any):**
  - IEEE IES Technical Committee on Motion Control