CALL FOR PAPERS - SPECIAL SESSION

"Data-Driven Control and Estimation: Robust Methods for Noisy and Uncertain Systems"

for CODIT 2026

July 13-16, 2026 ▪ Bari, Italy

Session Co-Chairs:

Dr. Francesco Giannini, University of Calabria, Italy - email: francesco.giannini@dimes.unical.it

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Session description:

This special session deals with the problem of developing data-driven control and estimation methods that remain reliable in the presence of noise, disturbances, and model uncertainty. While classical data-driven control frameworks often assume noise-free and linear dynamics, real-world systems exhibit stochastic behaviours, partial observability, and corrupted measurements. This session focuses on recent advances that extend data-driven approaches to robust state estimation, output prediction, and uncertainty-aware control synthesis.

The goal is to present new theoretical foundations and algorithmic solutions that explicitly incorporate noise and stochasticity into data-driven modeling, estimation, and control. Particular attention is given to uncertainty quantification, noise propagation in data matrices, robust predictive control, and data-driven observer or filter design. By bringing together contributions on estimation and robustness, the session aims to foster discussion on how data-driven methods can be made reliable, scalable, and certifiable in practical noisy environments.

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

- Robust data-driven control
- Data-driven estimation, filtering, and observer design
- Noise-aware data representations, Hankel matrices, and trajectory-based models
- Sensitivity and uncertainty quantification for noisy data
- Applications of robust data-driven estimation and control to complex systems

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SUBMISSION

Papers must be submitted electronically for peer review through PaperCept by **February 07, 2026:** **http://controls.papercept.net/conferences/scripts/start.pl**. In PaperCept, click on the **CoDIT 2026 link "Submit a Contribution to CoDIT 2026" and follow the steps.**

IMPORTANT: All papers must be written in English and should describe original work. The length of the paper is limited to a maximum of 6 pages (in the standard IEEE conference double column format).

DEADLINES

February 07, 2026: deadline for paper submission

April 30, 2026: notification of acceptance/reject

May 20, 2026: deadline for final paper and registration