



CALL FOR PAPERS - SPECIAL SESSION

“Intelligent Techniques for Modeling and Control of Complex Electromechanical Systems: From Wind Turbines to Robots”

for **CODIT 2026**

July 13-16, 2026 ▪ Bari, Italy

Session Co-Chairs:

Prof. Matilde Santos, University Complutense of Madrid, Spain - (email: msantos@ucm.es)

Prof. Jesús Enrique Sierra-Garcías, University of Burgos, Spain - (email: jesierra@ubu.es)

Session description:

This special session deals with the problem of modeling, analysis, and control of complex dynamical systems characterized by strong nonlinearities, uncertainties, high dimensionality, and coupling between physical and cyber components. Systems such as wind energy conversion devices and robotic platforms operate in highly variable and uncertain environments, where conventional model-based control approaches may face limitations. The session focuses on hybrid intelligent and data-driven techniques that enhance modeling accuracy, robustness, adaptability, and control efficiency for such systems, while addressing real-world constraints such as disturbances, parameter variations, and limited sensing.

The goal is to bring together researchers and practitioners working on advanced and hybrid intelligent methods for the control and optimization of complex systems, with particular emphasis on wind energy systems and robotics. The session aims to foster discussion on recent theoretical developments, algorithmic innovations, and practical implementations that combine control theory, artificial intelligence, machine learning, and optimization. Contributions addressing both fundamental methodologies and application-oriented solutions are strongly encouraged, especially those demonstrating improved performance, reliability, and efficiency in real or realistic operating conditions.

The topics of interest include but are not limited to the following **applied to wind energy devices and robotic systems**.

- Intelligent and data-driven modeling of nonlinear dynamical systems
- Machine learning and deep learning for system identification and control
- Adaptive, robust, and predictive control using intelligent techniques
- Reinforcement learning and optimal decision-making for control
- Hybrid model-based and data-driven control strategies
- Fault diagnosis, fault-tolerant control, and health monitoring using AI methods

- Optimization and decision-making under uncertainty
- Real-time implementation and experimental validation

Additional information:

The session will be technically endorsement by the research projects:

- WindWave research project (MCI/AEI/FEDER Project number RTI2018-094902-B-C21), funded by the Spanish Ministry of Science, Innovation and Universities.
- PROTEUS research project (MCI/AEI/FEDER Project number PID2024-155653OB-C21), funded by the Spanish Ministry of Science, Innovation and Universities.
- MANIBOT European research project (101120823), funded by European Commission

SUBMISSION

Papers must be submitted electronically for peer review through PaperCept by **February 07, 2026:** <http://controls.paperecept.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