

CALL FOR PAPERS - SPECIAL SESSION

“Digital twin and resilience of Hybrid Renewable Energy Systems”

for CODIT 2023

July 03-06, 2023 ▪ Rome, Italy

Session Co-Chairs:

Prof. Belkacem Ould Bouamama, Polytech Lille, France (belkacem.ouldbouamama@polytech-lille.fr)

Dr. Achour Debiane, CERTIA R&D, France (adebiane@certia.fr)

Session description:

Nowadays, Hybrid Renewable Energy Systems (HRES) which consist of different coupled of different energy sources are seen as emerging and sustainable solutions able to tackle the dependence on fossil fuels and mitigate greenhouse emissions. However, energy sources are highly intermittent and the availability of the energy cannot be guaranteed all the time. The main obstacles of Hybrid Renewable Energy Systems (HRES) are the overall cost, the safety of the installations, and their resilience to meet energy needs. The complexity in real application due to accuracy, nonlinearity of dynamic model, presence of noises and difficulty to collect faulty modes need a development of smart supervisory and efficient fault detection and diagnosis algorithms and fault tolerant control to deal with these new trends of integrating RES in energy production scheme and insure their resilience.

The goal of this invited session is to share the new advanced knowledges, technologies and theories based on model and no-model based under a digital twin platform enabling intelligent decision making for online tracking of technical and economic performance and prognosis and health management and recovery decision robust to intermittent aspect of energy sources.

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

- Fault detection and isolation of RES in real operating conditions
- Online optimal control and efficiency tracking of RES
- Online Data driven and model-based PHM (Prognosis and Health Management)
- Industrial or laboratory applications of supervision HRES
- Digital twin for optimal energy management and design of resilient of Hybrid RES

SUBMISSION

Papers must be submitted electronically for peer review through PaperCept by **January 27, 2023:**

<http://controls.papercept.net/conferences/scripts/start.pl>. In PaperCept, click on the **CoDIT 2023 link** “Submit a Contribution to CoDIT 2023” 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

January 27, 2023: deadline for paper submission

April 15, 2023: notification of acceptance/reject

May 20, 2023: deadline for final paper and registration