

Paris, France
April 23-26, 2019



6th International Conference on Control,
Decision and Information Technologies

CODIT'19



**CALL FOR PAPERS
SPECIAL SESSION ON**

**“Fractional order systems: theory and applications”
for CODIT'19
April 23-26, 2019 – Paris, France**

Session Co-Chairs :

Prof. Riccardo Caponetto, *University of Catania, Italy*

Prof. Maria Gabriella Xibilia, *University of Messina, Italy*

Prof. Arturo Buscarino, *University of Catania, Italy*

Session description

The impact of fractional order circuits and systems over a wide range of fields is rapidly becoming evident. Fractional order models, in fact, appear to be more accurate in reproducing the behavior of physical processes than classical integer order models. Examples can be found in rheology, mechanics, chemistry, physics, bioengineering, robotics and many others scientific fields. As a consequence, a large literature describing the advantages of fractional calculus has been introduced in the last few decades. At the same time, fractional integrals and derivatives are also applied to the theory of control of dynamical systems, when the controlled system and/or the controller is described by fractional differential equations.

The main goal of this Special Session is to present timely and novel applications and implementations of fractional order circuits and systems. Modelling issues related to real-life cases will be deeply considered, as well as fractional order controller theory and realization. Examples of biomedical fractional order models will be also considered, highlighting their fundamental importance in the definition of new healthcare systems. Aspects related to the design, implementation and application of fractional order controllers will be addressed. Papers from the field of fractional order neural networks will be also appreciated.

The Special Session will benefit of the tight connection between researchers based on the COST Action CA15225 Fractional Systems involving universities and research groups from the whole European territory and their collaborations with international universities.

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

- Theory of fractional calculus
- Fractional order linear and nonlinear systems modeling
- Fractional order control
- Fractional order linear and nonlinear systems implementations
- Applications of fractional order modeling
- Fractional order neural networks

SUBMISSION

Papers must be submitted electronically for peer review through PaperCept by **December 05, 2018**: <http://controls.papercept.net/conferences/scripts/start.pl>. In PaperCept, click on the **CoDIT 2019 link** **“Submit a Contribution to CoDIT'19” and follow the steps.**

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

December 05, 2018: deadline for paper submission

February 08, 2019: notification of acceptance/reject

February 28, 2019: deadline for final paper and registration.