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Special  
Session

4<sup>th</sup> International Conference on  
Control, Decision and  
Information Technologies

April 5-7, 2017

CoDIT'17

Website: [www.codit2017.com](http://www.codit2017.com)

Barcelona, Spain

CALL FOR PAPERS  
SPECIAL SESSION ON  
“Higher Order PID Controllers’ Family in Control Performance”  
for CODIT’17  
April 5-7, 2017 – Barcelona, Spain

**Session Co-Chairs:**

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**Session description**

This special session deals with the impact of Integral and derivative higher order terms in control performance. In a Proportional-Integral-Derivative (PID) controller, first order integral and derivative terms are considered. Fractional Order PID controller ( $PI^\lambda D^\mu$ ) are another group of PID controllers’ family that  $\lambda$  and  $\mu$  can include fractional digits. By adding second order integral and derivative terms to PID controller, causes the elimination of steady-state error and improve the convergence rate of the system, respectively. In this manner,  $P+(I+D+I^2+D^2)$  controllers, in which each of the terms in parenthesis can be added to proportional term, result in a different behaviour in system. Besides, Fractional Higher Order PID Controller ( $P + (I^{2\alpha} I^\lambda D^\mu D^{2\beta})$ ), is a new research field in PID controllers’ science. Also Adaptive Higher Order PID (AHOPID) and Adaptive Fractional Higher Order PID (AFHOPID) controllers can be considered as a new research field.

The goal is to provide an opportunity for research and scientific discussion in the field of PID, Fuzzy-PID, Adaptive-PID and fractional PID controllers’ derivatives. By design and implementation of these controllers for various systems, a new generation of PID controllers can be achieved that have a better performance compared to currently available controllers.

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

- PID controller
- Higher order PID
- Classical control
- Fractional PID
- Fractional Higher Order PID
- Adaptive control
- Nonlinear control
- Optimal control
- Intelligent control
- Fuzzy control
- Industrial control systems
- Distributed control system
- Mechatronics
- Motion control
- Supervisory control
- Automation

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### **SUBMISSION**

Please submit your full paper choosing the right Special Session (**04-Special Session: Higher Order PID Controllers' Family in Control Performance**) on the EasyChair for CoDIT'17 website:

<https://easychair.org/conferences/?conf=codit17>

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).

### **IMPORTANT DATES**

December 4, 2016: deadline for paper submission

February 2, 2017: notification of acceptance/reject

February 26, 2017: deadline for final paper and registration.

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