

Open Invited Track on

Exhibition of Demonstrators for Educational purposes in Control sciences

Organizers: Laurent AUTRIQUE Sebastián DORMIDO
 LARIS, France UNED, Spain
 laurent.autrique@univ-angers.fr sdormido@dia.uned.es

Abstract: This open invited track is focused on the exhibition of educational devices in order to promote the excellence of colleagues involved in learning process of control concepts. The exhibition will highlight the future applicative trends of automation and control teaching in academia or for professional degrees. A specific aspect is related to virtual and remote labs in control.

IFAC technical committee for evaluation: TC9.4 (Control education)

Web site: <http://laris.univ-angers.fr/fr/vie-unite/educational-demonstrators.html>

Detailed description:

The scope for this open invited track concerns the IFAC technical committee TC 9.4 (Control education) from the CC 9 cluster (social system). It is focused on the exhibition of education devices related to:

- University education and continuing education issues in control engineering.
- Methodologies for improving the theory, practice and accessibility of control systems education.
- Control engineering laboratories (based on low-cost technologies), experiments, computer aided design, distance and virtual education technologies, e-learning, and internet based teaching technologies. Cooperation and technology transfer between academia and industry.

The open invited track devoted to *Exhibition of Demonstrators for Educational purposes in Control sciences* is meant to bring teachers, researchers and industrial partners together to share results, attractive challenges, network and feedback based on teaching practice. Organizers aim to provide a lively session to get fruitful exchanges and proposals for future collaborative research.



Such context is addressed in IFAC events such as:

- IFAC Workshop on Internet Based Control Education (last edition in Brescia, Italy, 2015)
- IFAC Symposium on Advances in Control Education organized triennially (last edition in Bratislava, Slovak Republic, 2016)

Academic researchers and lecturers in control, R&D specialists in instrumentation, control and industrial automation, and practicing control engineers from a variety of industrial sectors are invited to submit their work and to carefully detail educational aspects of their demonstrator. For example the following questions could be highlighted:

- How to evaluate the effect of demonstrator on the learning process?
- How to bring academia and industry together to facilitate and develop learning experiences which attract students to control engineering?
- How to use a demonstrator in order to promote control with its cross-boundary nature as a field that spans science, technology, engineering and mathematics (STEM)?
- How to adopt and promote Internet-based methodologies for teaching control engineering?
- How to develop a demonstrator in order to close the gap between control education practice and control engineering practice?



Topics of interest include but are not confined to:

- o *Teaching aids for control engineering*
- o *Virtual and remote labs, virtual reality in control education*
- o *University-industry co-operation in control engineering education*
- o *International programs in control engineering education*
- o *Teacher and student exchange programs between control labs*
- o *Embedded systems*
- o *Tele-operation*
- o *Distributed pedagogical agents and smart devices*
- o *Problem-based learning*

Demonstrator contributions can be mainly focused on application aspects of control in educational framework. For such presentations, we may suggest the “extended abstract” submission type. A specific international scientific committee will be in charge of evaluation of these contributions.

If you intend to bring your demonstrator device to the world congress, please provide an additional document describing the needed space and needed infrastructure. Our staff will contact you in order to satisfy your specific needs. You can also contact us: demonstrators@ifac2017.org

About Organizers...

Sebastian DORMIDO received his BSc and MSc degree in Physics from Universidad Complutense de Madrid in 1968 and 1969 and a PhD in Science from Universidad del Pais Vasco in 1971. Since 1975 he has been Full Professor at Facultad de Ciencias Físicas of Universidad Complutense de Madrid (1975-1982) and Escuela Técnica Superior de Ingeniería Informática at UNED (1982-). He has served as Vicerrector of Research (1983-1985) in UNED. His research interest is: Computer Control, Event Based Control, Modelling-Simulation and Control Education with emphasis on Remote and Virtual labs. He has authored or co-authored over 250 technical papers in international journals and conferences and has supervised 35 Ph.D. students. From 2001-2006 has been President of the Spanish Association of Automatic Control, CEA-IFAC. In 2007 received a Doctor Honorary Degree from Universidad de Huelva, in 2008 the National Automatic Control prize from Spanish Automatic Control Committee and in 2013 received a Doctor Honorary Degree from Universidad de Almería. From 2014 is the Chair of the IFAC Technical Committee on Control Education (TC9.4).



Laurent AUTRIQUE received a postgraduate degree (DEA) in process control from the Ecole Centrale (Nantes, France) in 1992, and a Ph.D. degree in the same institute in 1995. He was a research scientist for the PROMES Research Institute (C.N.R.S. Perpignan, France) until 2002. Then he was from 2002 to 2007 in the EHF Department (Expertise Hauts Flux), DGA (Weaponry Department of French Ministry of Defence) Font Romeu, (France). He is currently professor in LARIS (ISTIA, University of Angers, France). His research works are devoted to parametric identification, inverse problems, and process analysis. Main publications are focused on nonlinear PDE system describing state evolution of complex thermal processes.

