

# Open Invited Track

## Application of fractional order differentiation to real systems and demonstrators

### Organizer:

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**Abstract:** This Open Invited Track focuses on applications and demonstrators where fractional order differentiation is used.

**IFAC technical committee for evaluation: TC 1.1, TC 2.1, TC 2.2, TC 2.5**

**Open Invited Track identification code:**

### Detailed description:

Literature offers a growing number of applications of fractional calculus to modeling, analysis or control of dynamic systems. For instance, such modeling tools are used in various fields of research such as chemical physics, biology, heat science, hydrodynamic, etc. More specifically, tools based on fractional calculus allow to design fractional order controllers and/or to design control laws from fractional models.

In this open invitational session, the emphasis is on demonstrations of real systems where fractional differentiation is used. There are no restrictions on the type of demonstrator. Thus, there is no limitation on the final objective of the use of fractional differentiation (e.g., system identification, control, diagnosis, prognosis...) nor on the field of application (e.g., electrical/chemical/mechanical/hydrodynamic/... or e.g., automotive/aircraft/naval/industrial systems).

An area dedicated to demonstrators will be set aside during the conference. If you intend to bring your demonstrator device to the conference, please provide an additional document describing your technical specifications that will be examined by the organizer of this Open Invited Track. If the required specifications cannot be supplied, or if it is too tedious to bring your own demonstrator, screens will be available to show demonstration videos (recorded by you in advance).

### Key dates:

**15 December 2023** - Paper **submission** deadline  
**30 January 2024** - Notification of acceptance  
**22 April 2024** - Final paper **submission** deadline

