ICFDA 2027 — Open Invited Track

Fractional Calculus in Practice

Modeling, Identification, Implementation, and Applications

Organizers:

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Abstract: This open invited track focuses on the practical use of fractional calculus in science, engineering, and industry. It invites contributions on real-world applications, modeling and identification from measured data, numerical computation, signal and image processing, real-time implementation, and fractional-order control. The aim is to share methods, experimental evidence, and implementation experience that clarify when fractional approaches are useful and how they can be applied reliably under practical constraints.

Detailed description:

This track welcomes practical contributions that use fractional calculus to solve real-world problems. The focus is on methods supported by measured data, experimental validation, or concrete implementation requirements. Topics include:

- **Modeling and identification:** fractional models of real systems, estimation of orders and parameters from data, and model validation.
- **Computation and implementation:** numerical methods, efficient approximations, software tools, and real-time or embedded implementation.
- **Processing and control:** fractional methods for signal and image processing, estimation, monitoring, and control.
- **Real-world applications:** experimental and industrial studies in engineering, energy, materials, transport, and biomedical systems.

Contributions should explain the practical value of the fractional approach and report relevant accuracy, performance, and implementation costs. Comparisons with established methods and discussion of limitations and lessons learned are encouraged.

Open participation and promotion:

Submissions are open to all authors, with no limit on the number of papers in the track. The organizers will actively promote the track through targeted invitations and announcements to relevant academic and industrial communities. Following approval, the track will be listed on the ICFDA 2027 website with its submission code. Further promotion and attracting sufficient submissions remain the organizers' responsibility.

Track identification code: vck41

Key dates:

30 November 2026	Open invited paper submission deadline
15 February 2027	Notification of acceptance
30 April 2027	Final paper submission deadline