A Special Session on

Fractional Dynamical Systems and Applications

In conjunction with the 19 th IEEE International Symposium on Signal Processing and

Information Technology (ISSPIT'19)

Ajman, UAE, December 10 - 12, 2019

http://www.isspit.org/isspit/2019/

AIMS AND SCOPE:

Fractional calculus has been extensively employed to illustrate numerous phenomena in many applications such as in control theory, fluid flow, diffusion problem for dispersive transport in amorphous semiconductors, liquid crystals, biosystems, electrodynamics, electrostatics and elasticity, systems identification, signal and image processing, biological processes, and finance. The nonlocal property of the fractional DEs is one of the most significant advantages for using it in these applications. It is known that the differential and integral operator of integer order are local; nevertheless, the differential and integral operators of fractional order are nonlocal, implying that a system next state depends on its current and historical states. This invited session is devoted to research topics in the field of fractional calculus in order to present and to discuss the latest results in fractional dynamical systems:

- Signal analysis and filtering with fractional tools;
- Fractional modeling especially of biological systems, environmental science, electrical systems, electrochemical systems, mechanical systems;
- Fractional system identification (linear, nonlinear, multivariable methods, etc.)
- Implementation aspects (fractional controllers and filters implementation, etc.)
- Stability analysis of fractional systems;
- Control (Fractional PID, CRONE, H∞, etc.)
- Fractional obstacle problems;
- Long memory models in finance and economics;
- Chaos, control and synchronization in fractional difference systems;
- Numerical method and numerical analysis for nonlinear fractional dynamical systems;
- Continous time random walk models for ultraslow diffusion;

IMPORTANT DATES:

• Deadline for paper submission: October 30, 2019

• Notification of acceptance: November 15, 2019

• Deadline for camera-ready submission: November 18, 2019

• Conference date: December 10-12, 2019

SPECIAL SESSION ORGANIZERS:

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