UAEU College of Science كلية العلوم

Department of Mathematical Sciences

جامعة الإمارات العربية المتحدة
United Arab Emirates University

قسم علـوم الرياضيـــــات

Workshop on

Delay Differential Equations: Theory, Applications and New Trends

(DDEs-TANTs 18), from 3—4 October 2018, UAE University

About Workshop

Recently, there has been increasing interest related to the theory of *delay differential equations* (DDEs), due to their important applications in physics, biology, ecology, and physiology. There is no doubt that some of the recent developments in the theory of DDEs have enhanced our understanding of the qualitative behavior of their solutions and have many applications in mathematical biology and other related fields. Both theory and applications of DDEs require a bit more mathematical maturity than their *ordinary differential equations* (ODEs) counterparts. The mathematical description of delay dynamical systems will naturally involve the delay parameter in some specified way. Time-delay models appear in real problems because many processes include aftereffect phenomena in their inner dynamics. Nonlinearity and sensitivity analysis of DDEs have been studied intensely in the recent years in diverse areas of science and technology, particularly in the context of chaotic dynamics.

The main objective of this well-focused workshop (DDEs-TANTs 18) is to provide an opportunity to study the new trends and analytical insights of the delay differential equations, existence and uniqueness of the solutions, boundedness and persistence, oscillatory behavior of the solutions, stability and bifurcation analysis, parameter estimations and sensitivity analysis, and numerical investigations of solutions. Potential topics include but are not limited to the following:

- Development of novel theories or improvement to existing theories on delay differential equations
- Development of novel numerical approaches for delay differential equations
- Development of novel time delay models with their analytical or qualitative investigation
- Stability, sensitivity analysis and bifurcation analysis of time delay models
- Delay differential equations with optimal control.

Scientific Program

The scientific program of the workshop will consist of 50-minute plenary lectures, 30-minute invited lectures and 20-minute contributed talks. **Selected papers will be published in a special issue of an international impacted journal.**

Registration and Important Dates

The registration: **Free**
August 15, 2018, 5:00 pm: Deadline for abstract submissions (frihan@uaeu.ac.ae)
September 1, 2018: Notifications
October 3—4, 2018: **Workshop days**

Invited Speakers

1. Prof. **Gennady Bocharov**, Institute of Numerical Mathematics, Russian Academy of Sciences, Moscow, Russia
2. Prof. **Yang Kuang**, School of Mathematics and Statistical Sciences, Arizona State University, USA
3. Prof. **Radouane YAFIA**, Ibn Zohr University, Morocco

Organizing Committee

Prof. **Fathalla A. Rihan** (Chair), Email: frihan@uaeu.ac.ae, Tel: +971(0)506603324
Prof. **Mohamed Syam**
Dr. **Abdessamad Tridane**
Dr. **Nasser Al-Salti** (SQU, OMAN)

Scientific Committee

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2. Prof. Yang Kuang (USA)
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