



# The Qualitative Theory of Functional Differential Equations and their Applications

Guest Editors:

**Dr. Osama Moaaz**

Department of Mathematics,  
Faculty of Science, Mansoura  
University, Mansoura 35516,  
Egypt

**Prof. Dr. Higinio Ramos**

1. Scientific Computing Group,  
Universidad de Salamanca, Plaza  
de la Merced, 37008 Salamanca,  
Spain  
2. Escuela Politécnica Superior  
de Zamora, Universidad de  
Salamanca, Campus Viriato,  
49029 Zamora, Spain

Deadline for manuscript  
submissions:

**closed (15 May 2024)**

## Message from the Guest Editors

Dear Colleagues,

Functional differential equations arise in many applied sciences fields. Very recently, there was an active research movement that mainly and significantly developed methods and techniques for studying the qualitative theory differential equations.

Delay differential equations (DDE) as a subclass of functional differential equations take into account the dependence on the history of the system, which results in predicting the future in a more reliable and efficient way. Neutral delay differential equations arise in various phenomena, including problems concerning electric networks containing lossless transmission lines (as in high-speed computers where such lines are used to interconnect switching circuits), in the study of vibrating masses attached to an elastic bar or in the solution of variational problems with time delays, or in the theory of automatic control and in neuromechanical systems in which inertia plays a major role...





an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Sergei D. Odintsov

1. Institutió Catalana de Recerca  
i Estudis Avançats (ICREA),  
Passeig Luis Companys, 23,  
08010 Barcelona, Spain  
2. Institute of Space Sciences  
(ICE-CSIC), C. Can Magrans s/n,  
08193 Barcelona, Spain

## Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

## Author Benefits

**Open Access:** free for readers, with article processing charges (APC) paid by authors or their institutions.

**High Visibility:** indexed within Scopus, SCIE (Web of Science), CAPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

**Journal Rank:** JCR - Q2 (*Multidisciplinary Sciences*) / CiteScore - Q1 (*General Mathematics*); Q1 (*Physics and Astronomy*); Q1 (*Computer Science*)

## Contact Us

Symmetry Editorial Office  
MDPI, St. Alban-Anlage 66  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
www.mdpi.com

mdpi.com/journal/symmetry  
symmetry@mdpi.com  
X@Symmetry\_MDPI