



## Recent Developments on Fuzzy Sets Extensions

Guest Editor:

**Prof. Dr. Cengiz Kahraman**

Department of Industrial  
Engineering, Istanbul Technical  
University, Istanbul, Turkey

Deadline for manuscript  
submissions:

**30 June 2024**

### Message from the Guest Editor

Dear Colleagues,

This Special Issue covers symmetry and asymmetry phenomena occurring in recent developments in fuzzy research problems. We invite authors to submit their theoretical or experimental research presenting engineering models under fuzziness dealing with the symmetry or asymmetry of different types of information. This Special Issue is focused on the recent theoretical developments of ordinary fuzzy set extensions for modeling under vague and imprecise conditions. Topics of interest include, but are not limited to, the following theoretical and/or practical developments for modeling under fuzziness:

- Type-2 fuzzy sets;
- Hesitant fuzzy sets;
- Intuitionistic fuzzy sets;
- Spherical fuzzy sets;
- Picture fuzzy sets;
- Pythagorean fuzzy sets;
- Q-rung orthopair fuzzy sets;
- Neutrosophic sets;
- Fermatean fuzzy sets;
- Circular intuitionistic fuzzy sets.





an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Sergei D. Odintsov

1. Institució 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