Special Issue

Symmetry and Numerical Methods in Fluid Dynamics

Message from the Guest Editor

The majority of flow phenomena exhibit either symmetric or asymmetric behavior, which is often crucial for optimizing various processes. Understanding the control of symmetry mechanisms has become essential across scientific and engineering disciplines. Challenges arise from irregularities or fluid misallocation, typically stemming from disrupted symmetries in factors, parameters, or gradients. Thus, addressing and maintaining symmetry is paramount for process efficiency. Conversely, in fluid mechanics, enhancing efficiency may require deliberate disruption of symmetry. Consequently, discussions in experimental and computational fluid mechanics frequently revolve around fluid flow symmetry/asymmetry. Numerical methods play a vital role in revealing the complexities of fluid dynamics, providing insights into the behavior of symmetric and asymmetric flows. This Special Issue aims to explore the symmetry concept of computational fluid dynamics, focusing specifically on refining numerical methods. By pushing the boundaries of simulation techniques and analysis, it seeks to enhance the understanding of fluid behavior and optimize processes across diverse applications.

Guest Editor

Dr. Tamás Karches
Faculty of Water Science, Ludovika University of Public Service, 6500 Baja, Hungary

Deadline for manuscript submissions

31 October 2025

Symmetry

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 5.3

mdpi.com/si/205149

Symmetry
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
symmetry@mdpi.com

mdpi.com/journal/symmetry

Symmetry

an Open Access Journal
by MDPI

Impact Factor 2.2
CiteScore 5.3

mdpi.com/journal/symmetry

MDPI

About the Journal

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.

Editor-in-Chief

Prof. Dr. Sergei Odintsov

1. ICREA, 08010 Barcelona, Spain

2. Institute of Space Sciences (IEEC-CSIC), C. Can Magrans s/n, 08193 Barcelona, Spain

Author Benefits

Open Access:

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

High Visibility:

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

Journal Rank:

JCR - Q2 (Multidisciplinary Sciences) / CiteScore - Q1 (General Mathematics)