

Special Issue

Symmetry and Symmetry-Breaking in Fluid Dynamics

Message from the Guest Editors

Dear Colleagues, Symmetry underlies many fluid phenomena and often provides a key to a better understanding as well as simpler analytical or numerical solutions for a variety of flows. This special issue of *Symmetry* aims to stimulate new insights and perspectives into the role of symmetry in a wide range of fluid flows, symmetry-breaking phenomena, and flows, which are symmetric partially, locally, or intermittently – in space or time. Flow symmetries such as axial, translational, mirror, and helical are commonly imposed by the initial and boundary conditions. Conversely, flows of high degree of regularity may suffer symmetry breaking through instabilities or other mechanisms. The origin of many well-studied hydrodynamic instabilities is directly related to the emergence of symmetry breaking phenomena. All contributions are welcome, theoretical or experimental, including research articles, review papers, educational assessments, and methods tutorials. The flows considered may be of any scale or complexity, from microfluidic to galactic, from single-component to multi-phase, from inactive to driven by living organisms.

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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.

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