Symmetry

an Open Access Journal by MDPI

CiteScore: 5.3
Impact Factor: 2.2

Special Issue Reprint

Applications Based on Symmetry/Asymmetry in Fluid Mechanics

Edited by: Xi Chen

This Reprint is devoted to recent advances in the analysis and applications of fluid mechanics based on symmetry/asymmetry. In recent years, the growing significance of symmetry analysis and its applications has been realized in fluid mechanics, due not only to theoretical achievements in this area but also because of its numerous applications. This symmetry can be either on the space–time level or the time level. The applications of symmetry in fluid mechanics are usually interdisciplinary, such as mechanical, aerospace, chemical, and process engineering. Therefore, their exploration is crucial for many real-life applications. This reprint focuses on these significant issues with contributions by researchers from China, the USA, Romania, and India, covering a wide spectrum of important problems and topics of current research interest. These topics include the atmospheric surface layers, isotropic turbulence, tip leakage vortex in axial compressor rotors, supersonic jets, heat flux of compressible wall flows, blood damage analysis at laminar conditions, thermal convection at high Rayleigh numbers, asymmetry in the Gulf of Mexico, axial Couette flows, asymmetrical gas-stirred ladle, and the influence of fewer strand casting on the symmetry breaking of flow. We hope that this Reprint comes to serve as a source of ideas for many mechanists, mathematical physicists, and engineers interested in pursuing recent developments in the symmetry/asymmetry phenomena of fluids.

mdpi.com/books/reprint/12173