Special Issue

Developments in Mechanical Engineering and Symmetry

Message from the Guest Editors

I have the honor of inviting you to submit an article for a Special Issue of *Symmetry* focused on aerodynamic analysis and optimal design. Fluid machinery is an umbrella term used to describe all machines that convert energy with the help of a fluid. Such machines are often a key component in various fields. The related aerodynamic/fluid-dynamic behavior and performances are closely related to fluid/structure or fluid/material interaction mechanisms. Analysis and optimization of these aspects can thus improve the performances of these systems and guide material selection and/or component shape definition, thereby enhancing the efficiency and stability of many systems of practical interest. Along these lines, the aim of this Special Issue is to present symmetry methods and new ideas in the field of aerodynamic analysis and optimal design related to fluid machinery. Relevant systems include (but are not limited to) valves, steam turbines, gas turbines, aviation engines, rocket engines, compressors, intake ducts, wind blades, aircraft, helicopters, automobiles, fans, ventilators, etc...

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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

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