Special Issue

Challenges and Directions in Fluid Structure Interaction

Message from the Guest Editors

Fluid–structure interactions are ubiquitous in nature and many engineering systems. Examples of these interactions include flag flapping, insect flight, fish swimming, arterial flows, particle flows and wind turbines. These problems typically involve an unsteady interplay among hydrodynamic, elastic, damping and inertial forces as well as other forces due to control techniques. Due to their universality and importance, great efforts have been made to study these fluid–structure interaction problems, with a particular focus on developing numerical methods and experimental techniques, elucidating the associated physics and promoting these applications in engineering designs. We welcome articles on themes including, but not limited to: numerical methods, experimental techniques, flow physics, multiprocess coupling, flexible structure controls and applications of optimization and machine learning.

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