Methods and Applications of Fluid–Structure Interaction

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Message from the Guest Editor

Fluid-structure interaction (FSI) is the interaction of some movable or deformable structure with internal or ambient fluid flow. Examples of such interaction are the rotation of wind turbines, the flight of birds and insects, the self-propulsion of fish, vibrations of structures in a stream, the movement of fluid in elastic tubes, etc. The interaction of fluid and structure is an important factor in the design of many engineering systems, such as automobiles, aircraft, spacecraft, engines, and bridges. Fluid–structure interaction problems are often too complex to solve analytically and so they have to be analyzed by means of experiments or numerical simulation. Research in the fields of computational fluid dynamics and computational structural dynamics is still ongoing but the maturity of these fields enables numerical simulation of fluid-structure interaction. This book will contain state-of-the-art contributions to these rapidly growing research areas. It will be of essential value to mathematicians, physicists, and engineers working in the fields of fluid-structure interaction as well as of related phenomena, and to researchers working in medicine and the life sciences.

Special Issue

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Message from the Editor-in-Chief

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