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Manipulation of Elastic Waves and Its Application in Symmetry/Asymmetry-Engineered Structures

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Message from the Guest Editors

Dear Colleagues,

Elastic waves are typical motion forms of engineering symmetric and asymmetric structures. The mechanical vibration of major equipment, such as large spacecraft/aircraft, underwater vehicles, precision machine tools, etc., is essentially the superposition of elastic waves inside their structural components. The studies of elastic wave propagation and manipulation have been an important research topic in mechanics since the 1950s. These studies can help to understand the complex structural vibration and breakthrough technical performance limits in engineering. For example, the recent emergence of elastic metamaterial/metasurfaces, capable of flexibly manipulating elastic waves and breaking the symmetry of the system, has advanced the development of low-frequency vibration suppression, energy harvesting, acoustoelastic devices, and wave engineering. This Special Issue welcomes researchers to contribute to elastic wave manipulations and their applications in structural vibration control, including new physical mechanisms, calculation methods, structure designs, and optimization methods.



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Special Issue



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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.

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