

Special Issue

Symmetry/Asymmetry of Ultrasonic Guided Waves in Structural Health Monitoring and Non-destructive Testing

Message from the Guest Editors

Nowadays, the ultrasonic guided waves (UGW) method is an attractive and well-known technique for non-destructive testing (NDT) and structural health monitoring (SHM) tasks. The utilization of these waves for ensuring the compliance of objects with safety requirements by detecting structural changes during manufacturing and performing monitoring during the service life is an effective tool for environmental sustainability. Lamb waves, one type of UGW generated in plates and shell components, represent a promising solution for the failure prevention of various types of objects in future. There are two groups of dispersive modes of Lamb waves: symmetric and anti-symmetric. These dispersive modes, which propagate along the object under investigation, are highly sensitive to the properties of the material, sensitive to cracks at different depths, and can propagate over a relatively long distance (up to 100 m). Therefore, using the registered signals of Lamb waves, the early degradation of materials and the evaluation and detection of damage inside the structure are obtained faster and more sensitively...

Guest Editors

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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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