Special Issue

Analytical Simulation of Structural Dynamics and Vibration

Message from the Guest Editors

Structural dynamics and vibration-related problems are among the critical and most researched issues in aerospace, civil and mechanical engineering. Analytical modeling method based on theories, such as but not limited to the Lagrangian approach or Hamilton's principle, is widely used to understand the principal phenomenon and characteristics of dynamic systems, with high calculating efficiency and clear physical meaning. This Special Issue aims to foster the discussion on the latest development and application of analytical modeling of dynamic systems. The research target could be different mechanical, civil or other structures. Besides, high-performance mechanical metamaterials with special inner microstructures have been developed for vibration reduction. The wave propagation and dynamic behavior of these metamaterials are also a focus of this Special Issue.

Keywords

- structural dynamics
- vibration analysis
- nonlinear dynamics
- wave propagation
- noise reduction
- active and passive vibration control
- mechanical metamaterials
- Hamilton's principle

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Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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