Special Issue

Advances in Nonlinear Vibration: Modeling, Data-Based Methods and Applications

Message from the Guest Editors

Nonlinearity is known to play an important role in various fields of applied sciences. Structural nonlinearities, large-amplitude vibrations, limit cycles, instability, and friction are just some examples of nonlinear dynamical phenomena. The research community's interest in improving our awareness of nonlinear vibration phenomena has gained increased importance in recent years, in combination with the incipient industrial need for efficient and lightweight designs, and the necessity of monitoring and characterizing pre-existent structures. This Special Issue invites contributions on recent advances in nonlinear vibrations, focusing on modeling, data-based methods, and novel applications. Target topics include, but are not limited to, analytical and numerical methods, experimental nonlinear dynamics, signal processing, system identification and model updating, nonlinear phenomena in structures and structural health monitoring, nonlinear damping, dynamic interactions, nonlinear vibration control, and emerging topics in nonlinear vibrations.

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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