5. Nonlinear Energy Harvesting: Design, Analysis and Experiments

Introduction: Nonlinear energy harvesting has emerged as an important research area in the field of applied nonlinear dynamics and vibration. It focuses on harvesting and converting energy from nonlinear systems that exhibit complex and rich dynamical behaviors. This session aims to bring together researchers and practitioners from various disciplines to share their latest findings and advancements in the field of nonlinear energy harvesting.

Topics:

- Nonlinear energy harvesting devices and systems from vibration, rotation or waves
- Nonlinear dynamics in energy harvesting
- Vibration and control of nonlinear energy harvesters
- Nonlinear phenomena in energy harvesting, such as bifurcations, chaos, and resonance
- Nonlinear modeling and analysis of energy harvesting systems
- Experimental and numerical studies on nonlinear energy harvesting
- Applications of nonlinear energy harvesting in various fields, such as wireless sensor networks, wearable devices, and Internet of Things (IoT) systems
- Optimization and control strategies for enhancing energy harvesting efficiency in nonlinear systems
- Multi-scale and multi-physics approaches in nonlinear energy harvesting
- Nonlinear energy harvesting systems developed for multi-functional applications, such as performing dual functions of vibration isolation and energy harvesting
- Nonlinear multi-source or multi-directional energy harvesting systems

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