

## NONLINEAR VIBRATIONS AND THEIR APPLICATIONS IN ENGINEERING

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### ABSTRACT

Dynamic systems can behave non-linearly due to diverse reasons, including large displacements, large rotations, impacts, friction, fluid-structure interaction, non-linear control and non-linear constitutive behaviour. This, Minisymposium will be a forum for the presentation and discussion of different aspects concerning non-linear vibrations and their applications in engineering. The session aims at providing a forum for discussing and disseminating the approaches, methodologies, results and current challenges in the area of nonlinear dynamics and chaotic systems. Topics of interest include, but are not limited to:

- Beams, Plates and Shells
- Bifurcations and Stability
- Chaotic phenomena
- Energy harvesting
- Fluid-structure Interactions
- Non-linear Modes
- Vibro-impact phenomena
- Nonlinear periodic systems
- Numerical Techniques
- Structural Health Monitoring

### REFERENCES

- [1] Kachapi, Seyed Habibollah Hashemi, and Davood Domairry Ganji. Dynamics and vibrations: Progress in Nonlinear Analysis. Springer, (2015).