

ADVANCED NUMERICAL METHODS FOR NON-LINEAR DYNAMICS

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ABSTRACT

The Mini-Symposium aims at highlighting/discussing new developments in Numerical methods for linear and nonlinear dynamics of discrete and discretized systems as well as of reduced order modelling of complex and large dynamic systems. Theoretical and experimental studies as verification of theoretical results are expected.

The character of the Mini-Symposium is broad and includes papers (but not only) of impact and contact processes, dynamic stability of deterministic/random systems subjected to additive/multiplicative excitation or exhibiting self-excited vibrations. Papers may concern Hamiltonian/non-Hamiltonian and holonomic/non-holonomic (higher order) systems, nonlinear interactions, fluid structure interaction, auto-parametric systems, post-critical processes together with limit cycles and homo/heteroclinic orbits, nonlinear normal modes, stochastic resonance phenomena, harmonic synchronization, quasiperiodic and other inter-resonance processes, basins of attractors, maps, chaotic behaviour, etc.

Especially welcome are papers on recent and ongoing research as well as papers of multi-disciplinary nature. Primary research at various scales including micro/nanomechanics, biomechanics, space applications and other emerging areas are of particular interest.

Papers dealing with applications in physics and engineering and including case studies and technical development support, as well as interaction with other areas, are invited for submission.