FAKULTA STROJNÍHO INŽENÝRSTVÍ ústav mechaniky těles, mechatroniky a biomechaniky

ČSM

Pozvánka na přednášku / Lecture Announcement

Název / Title

Basins of attraction: a useful tool for deterministic and stochastic analysis of nonlinear dynamical systems

Přednášející / Lecturer

Stefano Lenci

Technical University of Marche, Ancona, Italy

Monday 29. 05. 2023, 10:00 h

FME BUT, Brno, Technická 2,

budova / Building A4, místnost / Room 716

Abstrakt / Abstract

This lecture deals with basins of attraction, that is a fundamental tool for the global analysis of dynamical systems, in particular mechanical ones. The definition and the main properties are summarized, and the usefulness is illustrated. Their relevance for both deterministic and stochastic dynamics is discussed in depth, showing some pros and cons.

Attention is paid on the tools needed for their computation and to the computational difficulties, which is the main limitation to their use in everyday life, both in research and in practice. The challenges for going toward its application to "high" dimensional system are also discussed.

Přednášející / Lecturer

Stefano Lenci is Professor of Structural Engineering at the Technical University of Marche, Ancona, Italy. His research deals with structural engineering, dynamics of structures, modelling of masonry materials. He has been President of the Italian Association of Mechanics (Aimeta), adhering to IUTAM, and now is Past President. He is the forthcoming Chair of the European Nonlinear Oscillation Conference Committee, part of Euromech. He is a member of the Executive Committee of the Design Engineering Division of the American Society of Mechanical Engineers (ASME). He is a member of the International Advisory Committee of the Institute of Theoretical and Applied Mechanics of the Academy of Science of the Czech Republic. He is a member of the Scientific Committee of the forthcoming WCEE2024 - 18th World Conference on Earthquake Engineering. He is Associate Editor of "European Journal of Mechanics A/Solids" and of "Nonlinear dynamics", and is/has been member of the Editorial Board of "Int. J. of Non-Linear Mechanics", "ASME J. Computational and Nonlinear Dynamics", "Meccanica", "Int. J. Dynamics and Control", "ASME J. of Vibration and Acoustics", "Int. J. of Mechanical Sciences", "ZAMM".

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