



**Journal of
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Guest Editorial

Special Issue: Selected Papers From 2023 Multibody Systems, Nonlinear Dynamics, and Control Conference

We are delighted to present this special issue featuring selected papers from the 19th International Conference on Multibody Systems, Nonlinear Dynamics, and Control (MSNDC), held in conjunction with the 2023 ASME International Design Engineering Technical Conferences and Computers and Information in Engineering conference. The MSNDC conference is a premier meeting event for professional networking and research exchange within the multibody systems and nonlinear dynamics research community. The 2023 edition of the MSNDC conference was held in Boston, MA, Aug. 20–23, 2023. It featured nearly 70 technical presentations that covered both traditional and emerging topics in multibody systems and nonlinear dynamics.

Conference papers recommended by reviewers and organizers were selected, considering the balance of topics in the areas of multibody systems and nonlinear dynamics. These selected papers, extended for journal publication, were subjected to the standard review process of the *ASME Journal of Computational and Nonlinear Dynamics* (JCND) for inclusion in this special issue. The thirteen papers presented in this special issue encompass a broad range of topics central to both MSNDC and JCND, including nonlinear finite element methods for multibody dynamics; machine learning approach for human-robot collaboration; Lie group time integration; data-driven modeling of vehicle-water interaction; surrogate model for hydraulic actuators; data-driven time stepping schemes; chaotic vibration; rotor dynamics; nonlinear vibration absorber; local resonators for nonlinear metamaterials; velocity control of a motor with integral retarded controller; and nonlinear normal modes with contact nonlinearity. As such, new theoretical, computational, and data-driven approaches in various areas are presented in this issue.

We are grateful for the opportunity to organize this special issue, highlighting the notable research contributions presented and

discussed at the MSNDC conference in 2023. We extend our special appreciation to the Editor in Chief of JCND, Professor Bogdan I. Epureanu, and the Assistant to the Editor, Amy Suski, for their support.

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