actuators

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Advanced Spacecraft Structural Dynamics and Actuation Control

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Deadline for manuscript submissions:
closed (31 May 2024)

Message from the Guest Editors

Dear Colleagues,

The recent literature has provided a number of contributions related to the dynamic modeling of such spacecraft, whilst the current ongoing research is devoted to nonlinear vibration and actuation control, addressing specific needs and issues. The aim of the present Special Issue is to collect original papers concerned with dynamical modeling, nonlinear vibration analysis, actuation control design, and the coordinated control of attitude motion and structural vibration for LSFS or its component structures. Theoretical, numerical and experimental contributions are welcome, provided they deal with the dynamics and control of flexible composite structures equipped on the LSFS. Modern analysis concerned with active vibration suppression and attitude adjustment are particularly encouraged for both analytical and experimental results.

This topic is related to actuator control systems and their application in structural vibration suppression and attitude control of spacecraft.

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Message from the Editorial Board

We are just entering the Next Wave of Technology (NWT) where actuators will play the same role as the computer chip did for computers/social media approximately four decades ago. Just in the U.S., production of $1 trillion year of electromechanical systems (vehicles, orthotics, manufacturing cells, freight trains, aircraft, etc.) will be impacted by the NWT, all driven by actuators. Five key trends can be found for the future perspectives: “Performance to Reliability”, “Hard to Soft”, “Macro to Nano”, “Homo to Hetero” and “Single to Multi functional”. We invite papers that primarily impact these economic sectors; those illustrating basic scientific principles are also welcome.

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