Special Issue

Deployable Space Structures and Mechanisms

Message from the Guest Editors

Deployable structures and mechanisms are critical to the success of almost all space missions. Deployable structures and mechanisms (i) ensure the stowage of photovoltaics (PV), antennas, optical surfaces, and other functional systems and components in a small volume during launch; (ii) autonomously deploy them into a large area or volume prior to operation; and (iii) provide structural support ensuring the required shape characteristics are met under thermal and dynamic loading during operation. Maximizing the ratio of the deployed volume to the stowed volume and minimizing overall mass are key performance metrics for mission capability. Specific design challenges vary depending on the mission constraints (e.g. operation in a Lunar environment vs in low earth orbit) and result in different optimal architectures. We invite authors to submit their research manuscripts on all topics related to deployable space structures and mechanisms, including innovative concepts in stowing and deployment concepts, deployable structural architectures, deployment schemes, and high strain composites and materials with applications in the space environment.

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Aerospace adheres to rigorous peer-review as well as editorial processes and publishes high quality manuscripts that address both the fundamentals and applications of aeronautics and astronautics. Our goal is to enable rapid dissemination of high impact works to the scientific community.

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