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# GROUND EXPERIMENTS OF BOOM-MEMBRANE INTEGRATED DEPLOYABLE STRUCTURES FOR MICRO SATELLITES

**Abstract**

The ground deployment experiments of deployable membrane based on boom-membrane integrated structures for micro satellites have been performed to examine the deployment properties. We proposed a suspension gravity compensation system for the very light weight deployable structures with a simple configuration by adjusting the cable length of the suspension no to disturb the deployment procedures. The deployment experiments were performed to verify the performance of the gravity compensation system using boom-membrane integrated structures for micro satellite. The results indicated that the proposed gravity compensation system can support successfully the deployable membrane without disturbing deployment dynamics. By using the gravity compensation system, the deployment properties of the deployable membrane using boom-membrane integrated structures were investigated in detail. The experiment results indicated that the quantitative deployment torque properties by the deployable booms were obtained as well as the impact forces at the final deployment phase.