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Micro-jitter Attenuation of Spaceborne Cooler by Using a Blade-type Hyperelastic Shape Memory Alloy Passive Isolator

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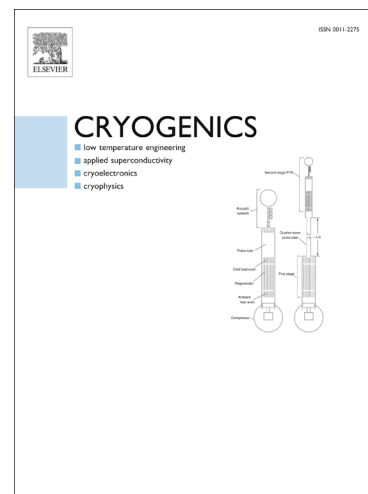
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Abstract

In this study, the primary design objective is to develop a passive isolator that can guarantee structural safety of the cooler assembly in a launch vibration environment without a launch locking mechanism, while effectively isolating the cooler-induced micro-jitter during the on-orbit operation of the cooler. To achieve the design objective, we focused on the utilization of characteristics of the hyperelastic shape memory effects. The major advantage of the isolator is that the micro-jitter isolation performance is much less sensitive to the aligned position of the isolator in comparison with the conventional isolator. Moreover, implementation of an additional 0g compensation device during a satellite level on-ground test, such as a jitter measurement test, is not

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