

Space Environment Testing of the Electrodynamic Dust Shield Technology

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Abstract— The Electrodynamic Dust Shield (EDS) has been in development at the NASA Kennedy Space Center as an active dust mitigation technology for lunar and Martian missions. The EDS can remove dust from surfaces and prevent the accumulation of dust on surfaces by activating a traveling electric field wave that carries electrostatically charged dust along. We present work on the development of a flight experiment to fully expose four EDS panels to the space environment. This flight experiment is part of the Materials International Space Station experiment X (MISSE-X), an external platform on the International Space Station that will expose materials to the space environment.