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NASA Shields-1, A CubeSat Platform for Testing the Effects of Space Radiation on Materials

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In 2017, NASA Langley Research Center (LaRC) celebrated its 100th year of providing aeronautics research, space technologies, and science missions. Part of NASA Langley's pioneering research and development has focused on materials and structures with multiple historical contributions in both aeronautics and space. NASA Langley has led space technology development of materials with space experiments with projects such as the Long Duration Exploration Facility (LDEF) during the Space Shuttle era and the current Materials International Space Station Experiment (MISSE). This year NASA Langley will be leading a space technology materials development effort with the Small Satellite, Shields-1 CubeSat, weighing 7 kgs with active data collection. The LaRC Shields-1 CubeSat will carry a research payload platform for materials durability experiments to evaluate emerging radiation shielding technologies, with atomic number (Z) grade radiation shielding developed at NASA Langley. LaRC Z-shielding has the potential to extend the lifetimes of small satellite missions by multiple years by reducing total ionizing dose (TID) and charging effects on TID sensitive electronic components. This spacecraft has been manifested on the NASA CubeSat Launch Initiative ELaNaXIX mission scheduled for a Summer 2018 launch into low earth orbit.

Minioral

Description

Speaker

Institute

Country

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