

Abstract Submitted
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**Electrostatic and Nanotechnology Multidisciplinary Approach -
for Space Radiation Shielding** RAM TRIPATHI, JOHN WILSON, NASA Langley Research Center, Hampton, VA 23681, ROBERT YOUNGQUIST, NASA, The John F. Kennedy Space Center, FL 32899 — For the success of NASA's new vision for space exploration to Moon, Mars and beyond, exposures from the hazards of severe space radiation in deep space long duration missions is "a must solve" problem. The exploration beyond low Earth orbit to enable routine access of space will require protection from the hazards of the accumulated exposures of space radiation. There is a need to look to new horizons for newer technologies. The present multidisciplinary investigation explores the feasibility of using the active electrostatic shielding in concert with the state-of-the-art materials shielding and protection technologies. The full space radiation environment has been used, for the first time, to explore the feasibility of multidisciplinary shielding. The goal is to repel enough positive charge ions so that they miss the spacecraft without attracting thermal electrons and further attenuate the exposure using nano-materials. Conclusions are drawn for the future directions of space radiation protection.

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