

Abstract Submitted  
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**Heavy Ion Interactions with Nanotubes and Nanowires** B.W. JACOBS, V.M. AYRES, R.M. RONNINGEN, A.F. ZELLER, E.H. CAREY, M.A. CRIMP, Michigan State University, East Lansing, MI 48824, M.P. PETKOV, NASA JetPropulsionLaboratory, Pasadena, CA 91109, S.L. RUTLEDGE, J.B. BENAVIDES, H.C. SHAW, NASA Goddard Space Flight Center, Greenbelt, MD 20771, D. LIU, Muniz Engineering, Inc., Greenbelt, MD 20771, J.B. HALPERN, M.Q. HE, G.L. HARRIS, Howard University, Washington, DC 20059 — We will present investigations of the response of single and multi wall carbon nanotubes, electrospun carbon nanofibers and gallium nitride nanowires to high-Z heavy ion radiation that simulates space radiation environments. The heavy ion radiation experiments were performed at the National Superconducting Cyclotron Laboratory at Michigan State University, whose available beams and beam energies well match the energy spectra of abundant charged particles in galactic cosmic rays. In these experiments, the nanotubes and nanowires were irradiated in two separate series of experiments using Krypton primary beams with mass numbers 86 and 78 respectively. Explorations of the fundamental mechanisms of radiation interactions and damage propagation in reduced dimensionality systems, and in nanoscale systems with high surface to bulk ratios and small overall volumes, will be presented.

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