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GEANT4 dose estimations of solar protons: aluminum and Bi2O3-PMMA shielding JACOB MIRELES, Department of Physics, University of Texas El Paso, USA, MIGUEL CASTRO-COLIN , Bruker AXS GmbH, Karlsruhe, Germany, JORGE LOPEZ , Department of Physics, University of Texas El Paso, USA, LASZLO SAJO-BOHUS , Simon Bolivar University, Baruta 89000, Caracas, Venezuela, YV-1080A — To characterize the shielding efficiency of a Bi2O3-PMMA based compound (Cao et al,2020) we use a Monte Carlo method (GEANT4) approach. The spectral component of solar protons and secondary radiation were studied. We seek to estimate the does reduction of Bi2O3-PMMA. Emphasis has been made on the experimental results obtained from solid stat nuclear track detectors and aluminum shielding. Results with aluminum shielding were experimentally obtained at the ISS. They served to validate the results from the Bi2O3-PMMA shielding compound. The aim is to foresee the effects in biosystems and electronic equipment during long term space exploration from dose estimations. Both, HZE-particles, and neutrons, are known to be directly present in GCR or as secondary radiation from GCR or solar protons. Adverse affects from radiation can be safely reduced, if doses can be adequately estimated

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