

Abstract Submitted
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Theoretical study of isotopic production cross-sections in proton-nucleus reactions at 200MeV MOHAMMAD S. SABRA, USRA, Space Science Department, NASA Marshall Space Flight Center, Huntsville, AL 35805 — As NASA's future plans are likely to include extended human missions in deep space, protections from space radiation take on increased importance. When galactic cosmic rays, mainly protons, interacts with the material of spacecraft, secondary fragments are produced, which contribute substantially to the dose and dose equivalent received by the crew inside. A detailed understanding of the reaction mechanism, as well as a knowledge of cross sections are needed. We analyze energy spectra, angular distributions, and isotopic cross-sections of intermediate-mass fragments (IMFs) from the interaction of ^{27}Al , ^{59}Co , and ^{197}Au with 200 MeV protons. Calculations within the modified statistical model with final state interaction were performed using SAPTON code. General agreement is obtained with the experiment which suggests that most of the IMFs are emitted after equilibrium is reached (i.e. in the evaporation stage).

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