

Abstract Submitted  
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**Nuclear Fragmentation Processes Relevant for Human Space Radiation Protection** ZI-WEI LIN, University of Alabama in Huntsville — Space radiation from cosmic ray particles is one of the main challenges for human space explorations such as a moon base or a trip to Mars. Models have been developed in order to predict the radiation exposure to astronauts and to evaluate the effectiveness of different shielding materials, and a key ingredient in these models is the physics of nuclear fragmentations. We have developed a semi-analytical method to determine which partial cross sections of nuclear fragmentations most affect the radiation dose behind shielding materials due to exposure to galactic cosmic rays. The cross sections thus determined will require more theoretical and/or experimental studies in order for us to better predict, reduce and mitigate the radiation exposure in human space explorations.

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