

Abstract Submitted  
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**NUCFRG3: Light ion improvements to the nuclear fragmentation model** ANNE ADAMCZYK, University of Tennessee, RYAN NORMAN, NASA Langley Research Center, SIRIKUL SRIPRISAN, Prairie View A&M University, LAWRENCE TOWNSEND, University of Tennessee, JOHN NORBURY, STEVE BLATTNIG, TONY SLABA, NASA Langley Research Center — Light ion improvements to the nuclear fragmentation model NUCFRG are reported. Improvements include the replacement of the simple light ion production model with a light ion coalescence model and an improved electromagnetic dissociation (EMD) formalism. Prior versions of the model provide reasonable overall agreement with measured data; however, those versions lack a physics-based description for coalescence and EMD. The NUCFRG3 model has improved theoretical descriptions of these mechanisms and offers additional benefits. Previous work established the improved EMD formalism to be more accurate than the predecessor. The predictive capability of NUCFRG has been improved and strengthened by the light ion physics-based changes. Based on increased capability and better theoretical grounding of NUCFRG3, it is recommended that it replace NUCFRG2 for space radiation assessments and other applications.

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