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Determining Angle Dependent Effective Rigidity Cutoffs for ISS-CALET Ultra-Heavy Cosmic-Ray Analysis[1] WOLFGANG ZOBER, Washington University, St. Louis, AND THE CALET COLLABORATION — The CALorimetric Electron Telescope (CALET) has been collecting data on the International Space Station (ISS) since shortly after its launch in August 2015. Its main calorimeter (CAL), is designed to measure the fluxes of the highest energy cosmic-ray electrons, but has also made excellent measurements of cosmic-ray (CR) nuclei and gamma rays. Ultra-heavy (UH) CR events are screened by the geomagnetic field, which the preliminary analysis has used for a vertical cutoff rigidity to determine a minimum energy threshold for valid events. Current work is now being done to improve this energy threshold to boost statistics and resolution in UHCR measurements by calculating an angle dependent effective cutoff rigidity. This has been explored in two ways: an angle dependent Stoermer approximation and a ray-tracing program that calculates the effective cutoff by determining allowed trajectory energies with a Cash-Karp Runge-Kutta that was inspired by the work of D.F. Smart and M.A. Shea. These methods have found use in UHCR analysis and could be used in a positron-electron spectra calculation. Here we present the current state of the analysis and show the improvements in the data thus far from properly accounting for the trajectory of the detected nuclei.

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