

Abstract Submitted
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High Altitude Dependence of Ionizing Radiation from Cosmic Rays¹ ZACHARY GIBSON, Utah State University, AKIHIRO NAGATA, MIDORI MORIKAWA, TAKUYUKI SAKAI, TAKAHIRO SHIMIZU, YUTA TAKAHASHI, SHUSUKE OKITA, University of Tsukuba, RAUL RAMIREZ, ALEXANDRA HUGHLETT, Utah State University, TOSHIHIRO KAMEDA, University of Tsukuba, JR DENNISON, Utah State University — Cosmic radiation was measured as a function of altitude using a compact Geiger counter aboard a high altitude balloon. Researchers from University of Tsukuba developed and flew the payload with the Utah State Get-Away-Special team. Dose rate, temperature, pressure, humidity, altitude and position data were acquired during a ~4 hour flight up to an altitude of 32 km in August 2016. The balloon reached an altitude more than 5 times the height of that reached by Victor Hess' experiment in 1912 and the dose rate increased by a factor of ~300. Data from a second flight in October 2016 will be corrected for the temperature and pressure dependence of the efficiency of the Geiger counter. The magnitude and non-monotonically increasing profile of the dose curve with altitude were found to agree well with previous measurements and with theoretical predictions based on the production of showers of daughter products generated by interactions with the atmosphere of cosmic rays.

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