

## The long term observation of the high energy electrons and protons on the International Space Station

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JAXA has operated the Standard DOse Monitor (SDOM) since 2009. SDOM measures the energy distributions of high-energy light particles such as electrons, protons, alpha, which cause deterioration of component materials and malfunction of electronic components. Also in order to evaluate the dose outside the International Space Station (ISS), data has been provided to NASA since 2016 and is used as data for radiation dose assessment.

We will introduce the solar cycle variation and geomagnetic activity dependence of SDOM data. In addition, as reported in Kataoka et al. (2016), relativistic electron precipitation (REP) event related to solar activity is observed in the ISS orbit. Based on the SDOM observation data during the REP events, we will quantitatively discuss variation of the radiation belt and exposed dose in a extra vehicular activity.

Keywords: the International Space Station, Space radiation, Radiation exposure, High energy particles