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Cosmic-ray modulation over the past 10 years observed with CALET on the International Space Station

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The CALorimetric Electron Telescope (CALET) installed on the International Space Station (ISS) has been measuring high-energy cosmic rays (CRs) and gamma rays to understand the cosmic-ray acceleration and propagation. The CALET adopts a low-energy electron (LEE) trigger working at high geomagnetic latitudes that can measure the low-energy CR electrons in the energy region from 1 GeV to 10 GeV, in addition to the high energy (HE) trigger with an energy threshold of ˜10 GeV. Using this LEE trigger, the CALET has observed the CR modulation of low-energy electrons and protons over nearly 10 years so far. In this work we report the CR modulation of low-energy electrons and protons observed by CALET since October 2015, including the solar minimum and the solar maximum of the 25th solar cycle. We especially focus on solar modulation during the solar maximum, discussing the variation of the electron and proton flux before and after the polarity reversal of the solar magnetic field, as well as the Forbush decrease.

Collaboration(s)

the CALET collaboration

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