

Inter-channel normalization and energy spectrum correction of the high-energy electron experiments (HEP) onboard the Arase satellite

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Detailed evaluation of the relative efficiency of azimuthal channels and their dependence on the energy of incident electrons has been conducted for the high-energy electron experiments (HEP) onboard the Arase satellite since the start of the satellite operation. Recently the simulation model of the instrument response has been improved to consider a realistic threshold and noise level of the onboard electronics for triggering an event of electron incidence in the detector system. The updated simulation model brings out new response properties of the instrument which could significantly modify the incident energy dependence as well as the relative efficiency among azimuthal channels, particularly at high energy. Accordingly, science data products such as Level-2 electron differential flux data are also to be updated on the basis of newly deduced calibration parameters. We show how the new electron flux data and their angular distribution are compared to the previous versions. Comparison with flux data of the other electron instruments onboard shows the same level of consistency in flux value for the lower energy part, while there still remains some discrepancy in the MeV range.