Altitudinal structure distribution of auroral particle acceleration region and the Current-Voltage relationship

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The parallel electric fields, which courses the acceleration of electrons, are thought to exist at altitudes of 3,000-12,000 km above the auroral region. Using particle data obtained by the Akebono satellite, we have statistically surveyed the occurrence region of particle acceleration. The results have shown that the occurrence frequency of electron acceleration in winter hemisphere decreases with the increasing altitudes. On the other hand, there is no altitudinal dependence in summer hemisphere. This result indicates the seasonal dependence of the altitude range of particle acceleration region. We will discuss the altitudinal structure of auroral particle acceleration region.

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