

The Qualification Model Development of ESA(Electro-Static Analyzer) on the KAISTSAT-4

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The mission of ESA on board KAISTSAT-4 satellite is to investigate the plasma processes occurring in the low altitude auroral acceleration region, where magnetic field-aligned currents couple global magnetospheric current systems to the high latitude ionosphere. Because the electrons with energy 5eV- 20keV are the main particles forming aurora, it is necessary to observe these particles with special instrument like top hat electrostatic analyzer (ESA) in order to understand plasma process in the auroral region. Top hat type ESA is designed to provide rapid measurements of particle distribution functions with good phase space resolution. ESA shall sample the particles distribution as open as every 50msec with 14 180 field of view. If ESA is operated simultaneously with other scientific payloads including FIMS, SST, LP and SM, it is expected to explain successfully the interaction mechanism between precipitation particle and ionosphere. In this presentation, we will introduce the qualification model(QM) that is the second stage for developing final model, flight model(FM).