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プラズマ圏高密度磁力管構造に関する KAGUYA によるプラズマ圏撮像観測と GPS-TEC による電離圏観測の比較
Comparative study of plasmaspheric filamental structures between EUV images by KAGUYA and TEC data by GPSComparative

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Total Electron density data derived by GPS is compared to two-dimensional images of the plasmasphere obtained by KAGUYA to clarify the formation mechanism of the plasmaspheric structures. He+ imaging of the Earth's plasmasphere have revealed several plasmaspheric density structures. The Extreme Ultraviolet Imager on the IMAGE satellite detected radial structures called "finger", and the Telescope of Extreme Ultraviolet onboard KAGUYA detected meridional structures called "filament". These structures are interpreted as isolated flux tube that is filled with denser plasma than neighboring tubes. The whole image of these structures, however, is still unknown since only EUV imaging have detected these. Considering very high mobility of plasma along the magnetic field line, these plasmaspheric tube enhancements are supposed to be connected to ionospheric structures. In this study, the ionospheric structure at the foot point of these flux tubes in the ionosphere is surveyed, using GPS-TEC data. Relation between the plasmasphere and the ionosphere, and the formation of the dense plasma isolated flux tube will be discussed in the presentation.