

The electron temperature of Io plasma torus deduced from the EUV spectra taken by Hisaki/EXCEED

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The volcanic ejecta from Io are ionized in space and trapped in Jupiter's magnetic field, and form Io Plasma Torus (IPT) along Io's orbit around the planet.

In-situ plasma measurements made by Voyager suggest that the electron distribution function in IPT has a nonthermal, high-energy tail.

To clarify the proper expression of the electron distribution of IPT to improve the spectral diagnosis, We assumed 4 electron distributions (Maxwellian, κ distribution, 2-Maxwellians, Maxwell+ κ distribution) and compared the results of spectral diagnosis.

We use the spectral image taken by the earth-orbiting satellite, EXCEED/HISAKI and determine the origin of EUV spectral emissions from IPT.