

## Observation of variation of Jupiter's ionospheric H<sub>3</sub><sup>+</sup> ion drift velocity

# Tadahisa Kobuna[1]; Takeshi Sakanoi[1]; Shoichi Okano[1]; Yasumasa Kasaba[2]; Shoko Ohtsuki[3]; Chihiro Tao[4]

[1] Planet. Plasma Atmos. Res. Cent., Tohoku Univ.; [2] Tohoku Univ.; [3] ISAS/JAXA; [4] Dept. of Geophysics, Tohoku Univ.

Hill current system in the Jupiter's magnetosphere maintains co-rotation of the middle magnetosphere by the transportation of angular momentum to equatorial plane plasma and causes Hall drift of a reverse direction in the ionosphere. The observations of the ion drift have been made by Rego et al.(1999) or Stallard et al.(2001) on the ground. These results showed that existence of magnetosphere events increases drift velocity by about twice and suggested that the ion drift velocity response to the variation of magnetosphere.

In this study, we conducted high-resolution spectral observation of Jovian H<sub>3</sub><sup>+</sup> aurora using an echell spectrograph, CHSELL, of IRTF at Mauna Kea on the island of Hawaii. The temporal variations of Jovian ionospheric drift are examined by observing the Doppler shift of auroral H<sub>3</sub><sup>+</sup> emission line at 3.953 $\mu$ m. We performed three sets of observation at an interval of one week to clarify the response of Jovian magnetosphere to the solar wind variation.

In this presentation, temporal variations of Jovian ionospheric drift and auroral intensity will be reported.