

Effects of the Interplanetary Magnetic Field on the Asymmetry of the Nightside Ionopause in the Venus

Miho Kanao[1]; Naoki Terada[2]; Atsushi Yamazaki[3]; Ichiro Yoshikawa[4]; Takumi Abe[5]; Masato Nakamura[6]

[1] Earth and Planetary Sci.Tokyo Univ.; [2] STE Lab., Nagoya Univ.; [3] Univ. of Electro-Communications; [4] ISAS; [5] JAXA/ISAS; [6] ISAS/JAXA

Recently a global hybrid simulation was calculated in the entire Venus-solar wind interaction region. It was found that the distribution of ionopause surface waves generated by the Kelvin-Helmholtz instability exhibited a clear asymmetry between hemispheres of different solar wind induced electric field.

In this Analysis, the Venus nightside ionopause is investigated using the PVO data. It is shown, for the first time, that the Venus nightside ionopause position is asymmetric according to the solar wind induced electric field in the region SZA larger than 120 deg. When the magnitude of the induced electric field is large (larger than 3mV/m), the asymmetry becomes clearer. Furthermore, the spatial scale of the waves by the K-H instability is examined.