Oral | Symbol P (Space and Planetary Sciences) | P-CG Complex & General

[P-CG38_1PM2]Planetary atmosphere, ionosphere and magnetosphere

Convener:*Takeshi Imamura(Japan Aerospace Exploration Agency, Institute of Space and Astronautical Science), Kanako Seki(Solar-Terrestrial Environment Laboratory, Nagoya University), Yukihiro Takahashi(Department of Cosmosciences, Graduate School of Science, Hokkaido University), Yoshiyuki O. Takahashi(Center for Planetary Science), Keiichiro Fukazawa(Research Institute for Information Technology,Kyushu University), Hiromu Nakagawa(Planetary Atmosphere Physics Laboratory, Department of Geophysics, Graduate School of Science, Tohoku University), Chair:Hiromu Nakagawa(Planetary Atmosphere Physics Laboratory, Department of Geophysics, Graduate School of Science, Tohoku University)

Thu. May 1, 2014 4:15 PM - 6:00 PM 423 (4F)

Studies of planetary atmospheres, ionospheres and magnetospheres will be presented and discussed. Results of ground-based observations, plans of spacecraft missions, and theoretical studies are welcome.

5:30 PM - 5:45 PM

[PCG38-P04_PG]Two dimensional numerical study on Venusian gravity waves by using mesoscale model

3-min talk in an oral session

*Hiroki ANDO[1], Ko-ichiro SUGIYAMA[1], Takeshi IMAMURA[1], Masatsugu ODAKA[2], Kensuke NAKAJIMA[3]
(1.ISAS/JAXA, 2.Hokkaido University, 3.Kyusyu University)

Keywords:Venus atmosphere, Gravity waves, Numerical study

Recently Venusian gravity waves are often observed. For example, Airglow measurements of O_2 found the gravity waves with horizontal wavelength of ～100 km at 110 km altitude. UV images also detect gravity waves with the horizontal wavelength of 60-150 km at the cloud top level (70 km altitude). However, only a specific altitudes can be observed in these measurements, thus it is difficult to examine the propagation characteristics and momentum flux of waves. Radio occultation measurements also detect upward propagating waves from the vertical temperature profiles within the altitude range of 65-90 km and suggests that waves with the vertical wavelength of 5-10 km are dominant by the spectral analysis. However, horizontal resolution in this measurement is ～200 km, then small scale gravity waves cannot be observed. Therefore, it is difficult to understand how these gravity waves have their influence on the Venusian atmosphere. In this study we developed a new Venusian mesoscale model and examined the propagation characteristic of the waves. In the model, we simulated the generation and propagation of the waves including the convective motion in the Venusian cloud layer. We will make a presentation about the initial analysis results.