

PPS010-P02

会場:コンベンションホール

時間: 5月26日17:15-18:45

計算機シミュレーションによる木星磁気圏ダイナミクスの研究

Computer simulation study on dynamics of Jovian magnetosphere

深沢 圭一郎^{1*}, 荻野 竜樹², 田中 高史¹

Keiichiro Fukazawa^{1*}, Tatsuki Ogino², Takashi Tanaka¹

¹九州大学大学院理学研究院地球惑星科学部門, ²名古屋大学太陽地球環境研究所

¹EPS, Kyushu Univ., ²STEL, Nagoya Univ.

Jupiter's rapidly rotating magnetosphere differs greatly from the Earth's magnetosphere. At Earth magnetospheric dynamics primarily are driven by the solar wind. At Jupiter the magnetosphere is almost controlled by the atmospherically driven corotation in early days. However, thanks to the observations, the Jovian magnetosphere is thought to be determined by a complex interaction between atmospherically driven corotation, the plasma source in the Io torus, and the solar wind. These processes are still not fully understood.

Using the computer Magnetohydrodynamics (MHD) simulation, we have studied the global configuration and dynamics of Jovian magnetosphere. We have showed the Jovian magnetosphere have greatly changed as corresponding to the solar wind condition and unstable feature under the low solar wind dynamic pressure. These results are well described the observations such as the Galileo and New Horizon.

In this presentation we will show the simulation results for interaction of Jovian magnetosphere and the solar wind. Then we will suggest the importance of solar wind information for understanding the Jovian magnetosphere. Finally we will show the next plan of Jovian magnetospheric simulation for the coming Jovian mission.

キーワード:木星,磁気圏,シミュレーション

Keywords: Jupiter, Magnetosphere, Simulation