

グローバルMHDシミュレーションを用いた太陽風動圧の大きな急上昇に対する磁気圏応答

Global MHD simulation of the magnetospheric response to large and sudden enhancement of the solar wind dynamic pressure

久保田 康文^{1*}, 片岡 龍峰², 田 光江¹, 田中 高史³, 長妻 努¹

Yasubumi Kubota^{1*}, Ryuho Kataoka², Mitsue Den¹, Takashi Tanaka³, Tsutomu Nagatsuma¹

¹ 情報通信研究機構, ² 東京工業大学, ³ 九州大学宇宙環境研究センター

¹NICT, ²Tokyo Institute of Technology, ³SERC, Kyushu University

New global MHD simulation of the magnetosphere has been developed and is now available for somewhat extreme solar wind input parameters. We started to investigate interesting phenomena including super-large sudden commencement (super SC), geosynchronous magnetopause crossing (GMC), as well as the saturation of cross polar cap potential etc. Here we show the initial results on the response of the magnetosphere to large and sudden enhancement of the solar wind dynamic pressure, gradually increasing the dynamic pressure up to the extreme level of GMC. We discuss the fundamental mechanisms of transient response.