Development of MAGDAS project: Search for global electromagnetic coupling from polar to equatorial ionosphere

*吉川 顕正[1]、樺澤 大生[2]、魚住 禎司[3]、藤本 晶子[4]、阿部 修司[3]
*Akimasa Yoshikawa[1], Taisei Kabasawa[2], Teiji Uozumi[3], Akiko Fujimoto[4], Shuji Abe[3]

1. 九州大学大学院理学研究院地球惑星科学部門、2. 九州大学大学院理学府地球惑星科学専攻、3. 九州大学国際宇宙天気科学・教育センター、4. 九州工業大学大学院情報工学研究院
1. Department of Earth and Planetary Sciences, Kyushu University, 2. Graduate school of Sciences, Kyushu Univerity, 3. International center for Space weather science and education, Kyushu University, 4. Kyushu Institute of Technology

The equatorial ionosphere is a final destination of electromagnetic energy brought about by energy incidence to the polar ionosphere. Distribution of geomagnetic disturbance accompanying such a coupling phenomenon shows strong asymmetry. Such an aspect suggests that the magnetosphere-ionosphere form a unique transmission and / or propagation system depending on each event.
The MAGDAS project investigates such a global electromagnetic coupling system by combining global geomagnetic field network observation with electric field observation using ionosonde installed at low and dip-equator region.
Recently, by using 250Hz sampling and 10Hz averaged MAGDAS 9 magnetometer data, we found that when the auroral substorm were enhanced during geomagnetic storm, together with enhancement of Pc1 wave at the polar region, the global Pc2 type disturbances (period range from 5 to 20 sec) can be captured from polar to equatorial region. In this talk, we will present recent update of MAGDAS project and of which scientific results.

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