Japan Geoscience Union Meeting 2011
(May 22-27 2011 at Makuhari, Chiba, Japan)

PEM030-P19 会場:コンベンションホール 時間:5 月 26 日 10:30-13:00

MAGDAS データから求めた Sq 等価電流系の可視化
A visualization of Sq equivalent current system from MAGDAS data

岡田 里衣子[1*], 湯元 清文[1], 山崎 洋介[1], 阿部 修司[2], 池田 昭大[2], 魚住 禎司[2], MAGDAS/CPMN グループ[2]
Riiko Okada[1*], Kiyohumi Yumoto[1], Yosuke Yamazaki[1], Shuji Abe[2], Akihiro Ikeda[2], Teiji Uozumi[2], MAGDAS/CPMN Group[2]

[1] 九州大学, [2] 九州大学　宙空環境研究センター
[1]Earth&Planetary Science Dept,Kyushu Univ, [2]SERC, Kyushu University

In order to understand generation mechanisms of day-to-day Sq current variations for space weather study, we tried to visualize (1) daily Sq equivalent currents estimated by MAGDAS/210 MM data, (2) daily Sq patterns obtained by the empirical model (Yamazaki et al., 2010), and (3) the subtraction of (1) - (2), i.e. the daily disturbance driven by changes in the solar wind and atmospheric neutral wind.

The daily Sq currents from 4 January to 31 December 2008, were obtained from magnetic data at 16 stations of MAGDAS/CPMN project, Space Environment Research Center, Kyushu University. In the present paper, we investigated the relationship between the interplanetary electric field (i.e. Ey =- Vsw x Bz(IMF)) and (3) the subtracted Sq currents in the magnetic equatorial region.

It is found that about 20% of 363 days the subtracted Sq currents at the magnetic equator showed a good correlation with the interplanetary magnetic field (IMF), i.e. the eastward EEJ was enhanced during the negative IMF Bz component, while the westward EEJ appeared during the positive IMF Bz component. On the other hand, 66% of 363 days we could not find a good relation between the subtracted Sq current near the dip equator and the IMF Bz variations, indicating the possibility of a coupling mechanism with the atmospheric neutral wind.

We acknowledge Mr Takashi Nosakon(Ashibetsu;ASB),Prof.Shoichi Okano(Onagawa;ONW),Mr Kenichi Isami(Amami;AMA), prof.Tiger Liu(Hualien;HLN),Dr Roland Otadoy(Cebu;CEB),Mr Suhardjono(Manado;MND & Kupang;KPG),Ms Clara Yatini(Pare Pare;PRP),Dr Robert Eager(Darwin;DAW),Dr R.Marshal(Cooktown;CKT & Townville;TWV & Camden;CMD), Prof.Mcphail(Rockhampton;ROC),Dr N.Prestage(Culgoora;CGR),and Mr Willmott(Melbourne;MLB) for supporting MAGDAS project.

キーワード: Sq, EEJ
Keywords: Sq, EEJ