

## Online EE-index for the Real-time Geospace Monitoring

# Tamiki Ueno[1]; Yuji Numata[1]; Yosuke Yamazaki[1]; Kiyohumi Yumoto[2]; Shuji Abe[2]; Teiji Uozumi[3]; Hideaki Kawano[1]; Akimasa Yoshikawa[1]; Manabu Shinohara[2]; Yumoto Kiyohumi MAGDAS/CPMN Group[4]

[1] Earth and Planetary Sci., Kyushu Univ.; [2] Space Environ. Res. Center, Kyushu Univ.; [3] SERC; [4] -

<http://www.serc.kyushu-u.ac.jp/>

*EE-index* (*EDst*, *EU*, and *EL*) is a new index proposed by Space Environment Research Center (SERC), Kyushu University for real-time and long-term geospace monitoring. The basic algorithm to obtain *EE-index* was constructed by Uozumi et al. (2008). *EU* and *EL* mainly represent the range of the EEJ (equatorial electrojet) and CEJ (equatorial counter electrojet) components, respectively. The baseline levels of *EU* and *EL* are obtained by averaging the H-component magnetic variations observed at the nightside (LT = 18-06) MAGDAS/CPMN (MAGnetic Data Acquisition System of the Circum-pan Pacific Magnetometer Network) stations along the magnetic equator (Addis Ababa, Ethiopia; AAB, Abidjan, Ivory Coast; ABJ, Ancon, Peru; ANC, Davao, PH; DAV, Eusebio, Brazil; EUS, Ilorin, Nigeria; ILR, Langkawi, Malaysia; LKW, Tirunelveli, India; TIR, Yap Island; YAP) and mid-latitude (Ewa Beach, HI, USA; EWA). Data from EWA is used to improve the accuracy of *EE-index*. The baseline value is defined as *EDst* and its variations are found to be similar to those of *Dst*. *EDst* can be used to quantify the scale of magnetic storms.

The greatest benefit of MAGDAS is its real-time data transfer system (see Yumoto et al., 2006 and 2007). In recent days, we developed automated routine programs to calculate *EE-index* in real-time. The online *EE-index* is available on our website in SERC (<http://www.serc.kyushu-u.ac.jp/>). By using this index, users can monitor the current state of magnetic activity in geospace and long-term variations of EEJ. One of the results of *EE-index* is a depression of *EU* (EEJ component) under the severe southward IMF.

Acknowledgments: The authors appreciate Prof. Hisashi Utada of Earthquake Research Institute University of Tokyo for supplying the magnetometer data from Christmas Island, Kiribati. The authors' deepest gratitude goes to all the members of the MAGDAS/CPMN project for their ceaseless support. In particular, The authors wish to thank the staffs of the observation stations: Dr. Baylie Damtie (Bahir Dar University, Ethiopia; AAB), Dr. Ronald Woodman Pollitt and Dr. Jose Ishitsuka (Instituto Geofisico del Peru; ANC), Fr. Daniel McNamara (Manila Observatory, Philippines; DAV), Ms. Carol A. K. Finn (Geomagnetism Group Leader, USGS, CO, USA; EWA), Ms. Lynn Kaison (NOAA Pacific Tsunami Warning Center, HI, USA; EWA), Dr. Mazlan Othman and Dr. Mohd Fairos (National Space Agency, Ministry of Science, Technology and Innovation, Malaysia; LKW) and Prof. Archana Bhattacharya (Indian Institute of Geomagnetism, India; TIR) for their kind cooperation.