

Pc 5 Index using dayside magnetic data from four low latitude stations

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Space Environment Research Center, Kyushu University is developing the Pc 5 Index to monitor the activity of Pc 5 magnetic pulsations and the solar wind velocity from the ground magnetometer stations. We are providing now the realtime Pc 5 Index by using the single station data at KUJ on our website (<http://www.serc.kyushu-u.ac.jp/pc5/>).

In our previous research, the correlation coefficient between the Pc 5 amplitude and the solar wind velocity increased when the magnetic station was located around the local noon.

By using longitudinally separated four low latitude stations at Kagoshima (KAG, G. M. Lat=24, LT=UT+9h), Ewa Beach (EWA, G. M. Lat=21, LT=UT-10h), Santa Maria (SMA, G. M. Lat=-19, LT=UT-3h), Laquila (LAQ, G. M. Lat=36, LT=UT+1h), we tried to monitor the Pc 5 activity around the local noon meridian continuously. These four stations are longitudinally separated around six hour in local time. Then we can use magnetic data observed near the local noon from one of these four stations.

Pc 5 amplitude show seasonal dependence and latitudinal dependence. To connect Pc 5 pulsation data from different stations, these dependences should be corrected. Correction coefficients are determined from the monthly mean amplitude of Pc 5 pulsations in each station.

The correlation coefficient between Pc 5 amplitude and the solar wind velocity is increased by using connected data from four stations. It allows us to estimate the solar wind velocity from the ground observation of Pc 5 pulsation more accurately.

We will develop realtime monitoring of Pc 5 Index using longitudinally separated stations in future.