

Status of Derivation of Dst and AE indices and their Quick-Look versions

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Responding to the growing demands for quicker availability of the Dst and AE indices, we have added Quick Look (QL) version to the final and provisional versions of both indices. Those QL versions are available on the WWW (<http://swdcd.db.kugi.kyoto-u.ac.jp>). However, there are many problems in derivation of all versions of indices. Especially versions of AE index are almost impossible because of too many missing data in Russian stations. Users still wish to use them for critical statistical analyses. For the both indices, we are trying to upgrade the observatories especially for QL-AE by a project for updating Russian AE stations (PURAES), and to obtain the data more timely and to increase the number of stations to drive the QL versions of Dst index.

Responding to the growing demands for quicker availability of the Dst and AE indices, we have added Quick Look (QL) version to the final and provisional versions of both indices. Those QL versions are available on the WWW (<http://swdcd.db.kugi.kyoto-u.ac.jp>). However, there are many problems in derivation of all versions of indices. For the final versions, data quality of some stations are degrading, especially final version of AE index is almost impossible because of too many missing data in Russian stations. We warned that the QL versions may have too many errors, but users still wish to use them for critical statistical analyses. For the both indices, we are trying to upgrade the observatories especially for QL-AE, and to obtain the data more timely and to increase the number of stations to drive the QL versions of Dst index.

The QL Dst is derived from data from a small number of stations (which are usually adequate when the data quality is good); near real-time data are not calibrated and are subject to noises. In view of the strong demand of the QL-Dst index for forecasting, an effort is being made to improve the quality of the index by increasing the number of stations used for its derivation. A plan for deriving a QL index for shorter time interval than one hour and based on data from more stations than the previous versions

As to the AE index, because of the problems with Russian stations, even the final and the provisional AE index may not be as high quality as might be hoped. This is mainly because of frequent and long missing data at some of the stations. In the year 2000 we set up a new station called Pebek with AARI as a replacement of Cape Wellen, which was closed in 1996. Also, we started a "Project for Upgrading Russian AE Stations" (PURAES) with cooperation with "Space Weather Magnetometer Experiments". These are with cooperation among Japan (Kyoto Univ. and CRL), Russia (IDG and AARI), and USA (APL and Univ. of Alaska). In this project we plan to install a new fluxgate magnetometer and a new absolute measurement system at each of the Russian AE stations, and to transmit near real-time data through weather satellites GMS and hopefully METEOSAT.

Through these efforts it will become possible to make the QL-AE index available more quickly. Also we will be able to upgrade the final AE index using the high quality record of local magnetometers. After these efforts, we will be able to make the values more open to the users.