

Geomagnetic forecast

General description

The geomagnetic forecast predicts the Disturbance storm-time index (DST) up to 4 hours ahead in near-real time. The prediction quality is usually on par with best available operational systems or better. Disturbance storm-time index (DST) is the average hourly variation of the horizontal (H) component of the geomagnetic field measured at near-equatorial magnetic observatories since 1997. The quiet solar dynamo (Sq) is subtracted from the variations before averaging. This index is associated primarily with the magnetospheric ring current. The real time index used in the forecast tool is currently maintained by the Kyoto WDC for Geomagnetism (<http://wdc.kugi.kyoto-u.ac.jp/dst/dir/dst2/onDstindex.html>). Due to the strong reaction of the Dst index to geomagnetic storms, the forecasted DST values can be used within Forecast System Ionosphere to predict the onset of an ionospheric storm.



The screenshot shows the AFFECTS web interface. At the top, there is a header with the DLR logo, the AFFECTS title 'Advanced Forecast For Ensuring Communications Through Space', and the project logo. Below the header is a navigation menu on the left with categories like 'Home', 'Forecast System', 'Ionosphere', 'GNSS based TEC', 'Geomagnetic indices', 'Solar wind data', 'Vertical sounding', and 'Early Warning GNSS'. The main content area is titled 'Dst index' and contains a description of the index, a section for 'Provision of Dst index data for AFFECTS', and a 'Dst Forecast' section. The 'Dst Forecast' section features a graph titled 'Near-real time Dst forecast (2013-12-12T10:29:31)'. The graph plots Dst in nT on the y-axis (ranging from -500 to 100) against UT in hours on the x-axis (ranging from -45 to 0). The data points are clustered around 0 nT. A legend on the right of the graph lists 'HDC-C2', '+1', '+2', '+3', and '+4'. Below the graph is a 'Dst Archive' section with a link to the final index HTML file. The right sidebar contains an 'Aktueller status' section with a login form, a note that 'AFFECTS is funded by EU', and logos for 'IKD', 'Fraunhofer IPT', 'UNIVERSITÄT FRIEDRICH-SCHILLER ERGENEN', and 'DLR SWACI'.

DST Forecast at the SWACI-AFFECTS webpage

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Disclaimer

This product was created on best efforts basis and is provided "as is" without warranties of any kind. The forecasts issued by this product are accurate to the best knowledge of the developers; however, the developers cannot be held responsible for any damage, loss of profit and similar charges rising out of the use of this product and its output. In particular, the developers of this product cannot be held responsible for the consequences of any action, or the lack of, based on the forecast provided by this product. Any such consequences shall be at sole responsibility of the respective decision makers.

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