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PEOPLE'S REPUBLIC OF CHINA**

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Geomagnetic storm intensity level

地磁暴强度等级

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Table of Contents

- 1 Scope
- 2 Terms and definitions
- 3 Geomagnetic storm intensity levels
- Annex A (informative) Location information for the four international geomagnetic observatories

Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. The standard proposed by the China Meteorological Administration. This standard by the national meteorological satellites and space weather Standardization Technical Committee on Space Weather Monitoring and Warning Technical Committee (SAC/TC347/SC3) centralized. This standard was drafted. National Satellite Meteorological Center (National Space Weather Monitoring and Warning Center). The main drafters of this standard. your music Ming, Chen Bo, Zhaohai Juan. Geomagnetic storm intensity level

1 Scope

China's national standard for the intensity levels of geomagnetic storms. It specifies the intensity classification of geomagnetic storms, and it applies to geomagnetic storm monitoring and forecasting. A geomagnetic storm is defined here as an intense worldwide disturbance of the geomagnetic field lasting from hours to days, in which the horizontal component of the field is perturbed typically by tens to hundreds of nanotesla and, in extreme cases, by more than a thousand. The classification is built on the Dst index, the standard measure of geomagnetic storm activity: the hourly mean of the horizontal component from four low-latitude observatories, corrected for the quiet-day field and for long-term secular variation and referred to the geomagnetic equator, expressed in nanotesla. Because the storm is driven by a westward ring current encircling the Earth, and because that current opposes the Earth's own field at low latitudes, a storm shows as a depression of Dst - so the more negative the value, the stronger the storm. The standard also defines the main phase of the storm as the interval during which the low-latitude horizontal component falls from its starting value to its minimum, and it uses the K index, the three-hourly single-station measure of local geomagnetic activity, in the same framework. Classifying storms matters because their consequences scale sharply with intensity: induced currents in long conductors stress transformers and pipelines, satellite drag rises as the upper atmosphere heats and expands, spacecraft charging and single event upsets increase, and high-latitude radio and navigation are degraded. Issued on 3

September 2014 and in force since 1 January 2015.

This standard specifies the level of intensity of geomagnetic storms. This standard applies to the monitoring and forecasting of storms.

2 Terms and definitions

The following terms and definitions apply to this document.

2.1 Earth's magnetic field vector geomagneticfieldvector Earth's magnetic field magnetic induction vector.

2.2 Geomagnetic horizontal component geomagnetichorizontalcomponent Magnetic field vector in the horizontal plane of the projector.

2.3 Geomagnetic storm geomagneticstorm magnetic storm Worldwide Mainland continued intense magnetic disturbances.

Note. The duration of the disturbance between hours to days, the horizontal component of the geomagnetic perturbation amplitude is usually in the tens of nT (represented by nT) to hundreds of nT Inter, in extreme cases more than a thousand nT .

2.4 Geomagnetic storm main phase mainphaseofgeomagneticstorm Low-latitude geomagnetic horizontal component of geomagnetic storms began to decline during the process to minimize the value from.

2.5 Geomagnetic equator geomagneticequator On the surface of the earth poles apart 90° in the great circle of dots.

2.6 International magnetically quiet day internationalquietday Worldwide Mainland magnetic field in each month of the most peaceful days.

2.7 Dst index Dstindex Description geomagnetic storm activity level index. NOTE. The Greenwich hour intervals, the usual level of geomagnetic four stations on the international component to eliminate international magnetically quiet day and long-term changes, and imputed to the When the geomagnetic equator after mean to nT (nT) as a unit. See Appendix common geomagnetic station location information of four international A.

2.8 K index Kindex Time interval for a single station of geomagnetic activity index 3h.

Note. according to GMT, starting from zero, every three hours as a period of a day, a total of eight data. Each recording geomagnetic three component geomagnetic station During and after each time period in order to eliminate the internal rules of the diurnal variation of the maximum amplitude component as the basis, according to the strength of geomagnetic activity is divided into 0 to 9, a total of 10 levels.