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The morphology Dst and Di variations of the geomagnetic field registered at the class of the Big Magnetic Storms

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The changes of external part of the Earth's magnetic field are very important in the geomagnetic researches. The magnetic storms are especial class of the geomagnetic disturbances.

Magnetic storms could be classified in two classes. The magnetic storms with sudden storm commencement impulse in initial phase belong to the first class (SSC- magnetic storms) and the second class are magnetic storms with gradually beginning (g-magnetic storms).

In 22nd and 23rd Sun's cycle (in period 1986-2003) in the geomagnetic activity are registered several extremely intensive magnetic storms classes A. Those were three especially Big Magnetic Storms.

First magnetic storm was registered in year of minimum Sun's activity, 06. February 1986. Second magnetic storm was registered in year of maximum Sun's activity, in 22nd Sun's cycle, 13. March 1989. During secondary maximum of 23rd Sun's cycle, or in phase that is determined as phase post maximum of Sun's activity (PPM - the Phase Post Maximum), in autumn equinox, 29, October 2003 and 7, November 2004 extremely strong and intensive magnetic storms are registered.

Level of the geomagnetic field changes, which are registered in mentioned the class of magnetic storms, was DST $>$ 350 nT. In the magnetic storms were registered max-

imum values of the three-hour geomagnetic activity index K=9.

For this researching Geophysical observatory L'Aquila (AQU) - Italy and Geomagnetic observatory Grocka (GCK) - Serbia will be leader observatories.

In first the phase of analyze are observed regular daily variations of the geomagnetic field in the month when is registered the geomagnetic disturbance. In next step of analyze, in each of mentioned magnetic storms, are observed groups of the aperiodical/irregular geomagnetic field variations. That is shown by groups Dst and Di variations of the geomagnetic field.

Dst variations show structure of the average hourly values the geomagnetic field, that are registered in class of Big Magnetic Storms. The changes of the minute values of the geomagnetic field constitute the spectrum Di variations. The Dst and Di variations of the geomagnetic field create the individual characteristic of the class Big Magnetic Storm.

Analyze the structure of the geomagnetic field variations, that are registered in the class Big Magnetic Storms, is done on several European observatories of the middle geomagnetic latitude (GCK, THY, AQU, EBR, CLF, BFE, NGK, WNG).