

CONSTRUCTION OF THE SPATIAL-TEMPORAL MODEL OF THE MAIN GEOMAGNETIC FIELD USING SATELLITE DATA

TATIANA ZVEREVA, Vadim Golovkov, Tatiana Chernova,
e-mail: zvereva@izmiran.ru

The spatial–temporal model of the geomagnetic field has been constructed using the data of the high-precision measurements of the CHAMP satellite from May 2001 to December 2008. The daily average spherical harmonious models calculated for the four-day interval, are used as source data to which the method of natural orthogonal components (NOCs) can be applied. It has been indicated that the obtained NOC series rapidly converges. The secular variation, secular acceleration and *Dst* variation are distinguished as individual NOC components. This makes it possible to construct the spatial-temporal field model. The spherical harmonic models of the main field, secular variation and secular acceleration are received up to degree/order 10. The features mentioned in the paper Mandeia and Olsen about the 2003 geomagnetic jerk are visible on the maps of the global distribution of the secular acceleration at Earth's surface. Namely, the maximum of the positive focus is visible in limited region around the 90° E meridian and the equator. A region of the weaker positive focus can be seen in the central Pacific Ocean. The weaker negative focus is seen in the southern African region including surrounding oceanic area.

Secular variations, geomagnetic field modelling, natural orthogonal components,
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TATIANA ZVEREVA, Institute of Terrestrial Magnetism, Ionosphere and Radio Wave
Propagation, e-mail: zvereva@izmiran.ru