

MULTI-STATION MAGNETIC OBSERVATIONS AS A BASE FOR THE NEW ULF INDEX

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The new ULF index of the planetary 2-6 mHz geomagnetic wave activity has been developed as a very useful tool for the planetary wave activity monitoring. Such monitoring can be applied for many different tasks in geophysics, e.g. to study plausible wave mechanisms of the solar-terrestrial interaction and energy transmission in the magnetosphere as well as in some other science branches like a heliobiology. The algorithm of the ULF wave index construction is presented. The ground ULF wave index is a proxy of the global ULF activity at any chosen time interval as well as at any latitude range. In our magnetic storm analysis we constructed the ULF-index separately for polar, auroral and subauroral geomagnetic latitudes in three magnetic local time intervals (03-12, 12-18 and 21-03 MLT). We compute this index using the 1-min sampled magnetic data from several global ground-based magnetometer networks. Several examples of ULF-index applying to the analyses of a level of Pc5 and Pi3 geomagnetic pulsations activity during different phases of magnetic storms are discussed. The similar ULF index can be constructed for a wave activity inside of the magnetosphere and in the interplanetary space.

Geomagnetic observations, ULF wave

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