



Geomagnetic field observations at the Dniepr-Donetsk Basin

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We present preliminary results of geomagnetic field observations in 2 – 50 kHz frequency range at several sites in the Dniepr-Donetsk Basin in 2004 year. At the base station (49.72° N, 36.23° E) geomagnetic field variations are recorded every second from the fall of 2004 year by the present time. Three components of the geomagnetic field: latitudinal (X), longitudinal (Y), and vertical (Z), are observed. Some observations were made also at different locations in the Dniepr-Donetsk Basin during intervals from some days to some hours.

Every geomagnetic field component shows clear daily variations. Their general behavior is similar to daily variations known for the middle latitudes and the same season. The highest activity of the geomagnetic field was observed during 11 am – 8 pm of the local time interval. Average changing of X and Z components intensity during the day looks rather similar to each other. Four distinctive modes of the field intensity correspond to 6.5 am, 1.0 pm, 2.5 pm, and 6.5 pm of the universal time. The daily variations of the Y component have much complex structure with a stable in time pattern possibly of the industrial origin.

Fine structure of data obtained show also the presence of fast oscillations caused by atmospheric. Detail study of the geomagnetic field perturbations associated with solar activity, lightings, and seismic events is a subject for the future work. Previous analysis of the whole set of the data showed the strong influence of the Asia thunderstorm activity on geomagnetic field in the Dniepr-Donetsk Basin. Simultaneous observations of the geomagnetic field in different locations allow the study spatial distribution of ground-ionosphere waveguide characteristics and local geodynamical state in the

Dniepr-Donetsk Basin.