

ULF MAGNETIC ACTIVITY STUDY IN SICHUAN SEISMO-ACTIVE REGION, CHINA

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It is believed that the most advantageous frequency range of magnetic variations suitable for the monitoring of earthquakes (EQ) preparation process is ULF one (0.001-0.5 Hz), both for the EM model development of the crustal rupture zones and EQ forecasting problem. There are numerous observations of ULF magnetic field enhanced activity before EQ and also many approaches to construct a physical model of this phenomenon. This work describes still one attempt to select the candidates for EQ precursors, basing on the experimental data, collected in China by multi-point synchronized observation magnetometer network. One of the most seismo-active regions in China is Sichuan. For example, the M 8.0 EQ occurred here May 12, 2008. For observation of ULF EQ-related phenomena we chose the southern Sichuan province, where the M 6.4 earthquake happened on August 30, 2008 at 8:30:52 UT. The earthquake hypocentre was located in point 26.28 N, 101.92 E at depth 17 km. This EQ was not an aftershock of M 8.0 Sichuan EQ because it was triggered along other fault. The EQ epicenter was in the Renhe District, Panzhihua, Sichuan, which is 50 km southeast of the city centre. The data from 3 spaced fluxgate magnetometers placed near epicenter at distances 10-55 km have been analyzed. The separation between magnetometers was in the range 40-65 km. The wave form, dynamical Fourier spectra and polarization ellipse parameters of signals from different pairs of magnetometers have been studied and compared with preseismic activity and natural magnetic field variation data. A complete analysis of these multi-points data will be presented in our report.

ULF, earthquake, precursor

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