



The 1998-2009 geomagnetic data and significant amplitude geomagnetic anomalies (re)analysis in correlation with earthquake occurrence and magnetic storms

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The paper is based on geomagnetic records made at Muntele Rosu Observatory (Romania), during the time interval from 1998 to date. The working data are represented by the geomagnetic field as recorded at Muntele Rosu Observatory and manual corrected emphasizing the missing data and by the seismic data, taken from the seismic bulletins of the National Institute for Earth Physics, for Vrancea source zone. The largest earthquake occurred in this time interval has the moment magnitude $M_w=6.3$ offering us the first opportunity to investigate possible connections between the geomagnetic field behaviour and the local seismicity of magnitude larger than 6.0. In order to discriminate local and global phenomena, the local geomagnetic data are compared with data provided by the INTERMAGNET Project, from 2 stations located outside the epicentral region, considered as reference stations (Surlari-SUA, Romania and Tihany-THY-Hungaria) and with the global geomagnetic indexes. Because the investigated period is of 11 years, covering a complete solar cycle, the solar-terrestrial perturbations have fluctuated from extremely small values to extremely large values, providing a very good medium to observe the correlation of magnetic signals with solar perturbations.

In this paper we also want to correct some conclusions given by previous studies that have associated magnetic anomalies due to the missing data with the occurrence of Vrancea intermediate depth earthquakes, in the period 1998-2001.