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Investigation of electromagnetic ULF/ELF-phenomena possibly related to the july 10th 2005 Podgorica seismic event using South European Ground Magnetometer (SEGMA) and DEMETER data.

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Seismic events can possibly produce electromagnetic waves in the ULF/ELF frequency range. A seismic event with magnitude 5.5 happened in 15 km depth on july 10 2005 in the region of Podgorica (Montenegro, Lat=42,41°N, Long=19,83°E). In the frame of the DEMETER and the SEGMA projects these phenomena are jointly investigated by ground based and space observations. ULF/ELF magnetic field data in mid and south Europe are provided by the South European Ground Magnetometer (SEGMA) chain. The sampling rate of the data analysed is between 1 and 16 Hz. The main problem occurring during analysing the data is to separate magnetic field disturbances which are caused by seismic events and geomagnetic activity or man made noise. One important parameter for the present analysis is the ratio of the vertical to the horizontal component (polarization) of the magnetic field. In order to differentiate man made noise from seismomagnetic events a quality figure of the stations has been determined. The global geomagnetic variations have been sorted out by using geomagnetic indices. The time period when data was analysed was about two weeks before and two weeks after the seismic event. ULF/ELF magnetic field data in Nagycenk (Hungary), L'Aquila (Italy) and Ranchio (Italy) have been correlated with the seismic

event. In order to estimate the damping of electromagnetic waves in the earths crust layers a simple model was developed and the results from the different stations were compared taken into account the local conductivity.