



Analysis of Schumann Resonance anomalies associated to geodynamical processes

P. Palangio(1), F. Masci(1), C. Di Lorenzo(1), M. Di Persio(1), and E. Lampis(2)

(1)Istituto Nazionale di Geofisica e Vulcanologia, Italy

(2)Geomagnetic System, Italy

(masci@ingv.it)

Electromagnetic phenomena, on the Earth surface and in the atmosphere, associated to geodynamical processes are widely discussed in literature. The Italian INGV (Istituto Nazionale di Geofisica e Vulcanologia) tectonomagnetic network was installed in 1989 to investigate the possible magnetic anomalies that could be associated to the tectonic activity in Central Italy. A new geomagnetic observatory of the network is in operation in the area of the town of Duronia (41°39'N, 14°28'E, 910m a.s.l.) from the end of 2007. The observatory was created in the frame of the MEM (Magnetic and Electric fields Monitoring) Project (Interreg IIIA Adriatic Cross Border Programme). The peculiarity of the Observatory of Duronia is due to the low electromagnetic background noise of the site. To measure the components of the magnetic field are employed low noise search coil magnetometers. These characteristics allow us to plan new research activities. One of these is the analysis of the spectral structure and its evolution in time of the Schumann Resonance harmonics in the range of frequencies [0.1 - 35.0]Hz. To that end, we report the time variation of the spectral tensor elements and the 3D Stokes parameters of the TM Earth-Ionosphere cavity modes and their possible anomalies that could be associated to the tectonic activities.