



## **Very low frequency (VLF) measurements and theoretical study of seismo-electromagnetic phenomena**

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In this study we compare amplitude and phase measurements, obtained by our very low frequency (VLF) receiver station, with analytical and numerical investigations of the VLF paths from the transmitter to the receiver. Particular interest is on variations of electrical conductivity profiles related to natural phenomena, e.g. due to earthquakes. Beside the well known seasonal and diurnal influences on the Earth-ionosphere VLF waveguide, the robust detection of an anomalous behavior is a major goal of the VLF station. This operational VLF monitoring system, continuously working since 2009, is complemented with ground based ultra low frequency (ULF) measurements from the South European Geomagnetic Array (SEGMA) multi station magnetometer chain.

The VLF measurements enable the remote detection of numerous natural and man made variations, simulation of the transmitter-receiver links further constrain the source area where the waveguide modifications originate, other parameters can be included.