

The INGV tectonomagnetic network in Central Italy

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Some electromagnetic phenomena on the Earth surface and in the atmosphere can be associated with tectonic and volcanic activity in the Earth crust. Volcanic eruptions and earthquakes can produce variations in the local geomagnetic field. The value of this variation is about few nT; some studies report a variation about 1-5 nT relating to earthquakes and a variation up to 10 nT relating to volcanic activity. The Italian Istituto Nazionale di Geofisica e Vulcanologia (INGV) tectonomagnetic network was installed in central Italy since the middle of 1989 to investigate possible seismomagnetic effects related to earthquakes occurrences. The network is part of the INGV L'Aquila Geomagnetic Observatory and it is located in Central Italy in an area extending approximately between latitude 41.6°N and 42.8°N, and between longitude 13.0°E and 14.3°E. We are reporting the actual state and the future developments of the network. At the present time, total geomagnetic field intensity data are collected in four stations using proton precession magnetometers. In the future the network will be supplied with two other stations developed inside the MEM Project (Interreg IIIA Adriatic Cross Border Programme) with the aim to thicken the network and to extend the research area. The leader partner of this project is the Abruzzo Region. The two stations will be operating from meddle of 2007 and the instrumentation of the present stations will be replaced with an Overhauser magnetometer and 3-axial magnetometer. Here we also report the results of last years data analysis and the correlation with the seismic activity recorded in Central Italy by the Italian Seismic National Network.