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Electromagnetic anomaly associated with Earth crustal activity in the frequency band from 0.001 Hz to 5 kHz

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The MEM Project (Interreg IIIA Adriatic Cross Border Programme) has been activated in the INGV Observatory of L'Aquila since 2004. The principal purpose of the project is the development of an observatories network to monitoring the electromagnetic signals in the band from 0.001 Hz to 100 KHz. The leader partner of the project is the Abruzzo Region; the others partners are the INGV (Italian Istituto Nazionale di Geofisica e Vulcanologia), the Regional Environmental Agency of Molise (ARPA-Molise), the Ferrara University, the Tirana University and the Geomagnetic Institute of Grocka, Beograd. The first MEM measurement station has been installed in L'Aquila INGV Geomagnetic Observatory (42˚ 23' N, 13˚ 19'E, 682m a.s.l.) and it has been operating from the middle of 2005. The innovative characteristic of the project can be single out in the approach chosen to study the complex problem to representing the electromagnetic fields spatial and temporal distributions in the band of interest. Both the distributions has been represented by some parameters containing the location and the characteristics of the electromagnetic background sources, natural and artificial, of noise. The employed technique is the wide band interferometry. Combining the simultaneous observations of the electromagnetic field obtained in the network stations, we are able to obtain detailed information about the investigated electromagnetic sources. Moreover, another considerable purpose of the MEM project is the electromagnetic monitoring of the geodynamic processes related to the seismic activity.