



1 Investigation of a karstic area using stratigraphical data and geophysical surveys

S. Margiotta, F. Mazzone and **S. Negri**

Dipartimento di Scienza dei Materiali- Osservatorio di Fisica, Chimica e Geologia Ambientali
- University of Lecce, Italy (sergio.negri@unile.it / Fax:+390832297548 / Phone:
+390832297563)

Sinkhole occurrence in Apulian area is strongly related to the peculiar geological and hydrogeological characteristics. This karstic phenomenon is generally the surface expression of the presence of caves and other groundwater flow conduits in soluble carbonate rocks. Spedicaturo area, near the Nociglia village (south-west of Salento), is a good example in which a karst area is seriously interested by a great number of hazards, of both natural and anthropogenic origin. These hazards are particularly related to the agricultural practices and so to the use of pesticide that directly flows in the groundwater through the karstic channels and cavities, and to the pollution for intense urbanization. The development of the cavities is verifying as a catastrophic subsidence event constituting a direct risk for the population. Geological features of the area were mapped, pointing out the zone of deformed rocks. Electrical resistivity measurements were carried out over the karst features in an area that from the geological surveys was considered of particular significance. In interpreted electrical image profiles, contours of elevated resistivity reflect the cross – sectional geometry of cavities. The technique is capable of discriminating between developing and mature sinkholes. The multidisciplinary approach could represent useful tools for sinkhole hazard assessment, supporting land planning and management in similar geological and hydrogeological settings.