

entitled "The role of culture in early human expansions (ROCEEH)" is to assess the spreading "out of Africa" in a spatial, cultural and biological context. Implicitly we suppose as working hypothesis that the influence of changing environmental conditions decreased as the importance of cultural and technological innovations grew. The ROCEEH project deals with a variety of variables and formats from geology, geomorphology, palaeontology and archaeology in vector, raster as well as text formats. To achieve the general objectives a georelational spatial information system was developed and implemented. The system is called "The ROCEEH Out of Africa Database (ROAD)". In this paper we focus especially on the infrastructure to visualize landscape features like geomorphology and soils as well as their evolution together with palaeontological and archaeological data.

---

## **Assessment of Subsurface Neolithic/ Palaeolithic Sites in the Southern Gargano Area, Apulia, Italy**

**Märker, Michael** (University Of Pavia, Italy)  
**Ivano Rellini** (University Of Genoa)  
**Luigi Mucerino** (University Of Genoa)  
**Volker Hochschild** (University Of Tübingen)

The stratigraphic reconstruction of cave's deposits combined with the study of the archaeological and biological contents provides an excellent record of the climatic changes that happened in the cave and its surroundings and also offers information about landscape evolution. Our study area is close to Manfredonia, Southern Gargano, Italy and characterized by important archaeological sites (i.e., Occhiopinto Cave). The aim of the study was to assess the spatial distribution of underground cavities. We used a parallel setting of transects in order to perform a 3D model of the underground structures. Therefore three different arrays were tested, Dipol-Dipol; Wenner and Schlumberger. The utilized electrode spacing for the surface transects was 2m. In order to calibrate and validate the analysis we made 2 core drillings yielding information on the stratigraphy and cavities in the underground. With the given value ranges and the respective electric resistivity arrays we were able to identify the location and depth of the major cavities in 3D for a ca. 25 ha test plot area.

---

## **Educational Experiences in Archaeological Information Modelling with the Mind Maps and Object-Oriented Paradigms**

**Martin-Rodilla, Patricia** (Institute Of Heritage Sciences (Incipit) Spanish National Research Council (CSIC))  
**Cesar Gonzalez-Perez** (Institute Of Heritage Sciences (Incipit) Spanish National Research Council (CSIC))

Information modelling in archaeology has produced important advances in ontologies or methodologies which have led to progress in archaeological information conceptualization, processing, integration and reuse. To perform these tasks, specific skills are required, including recognition of archaeological entities and their relationships. Despite the vital importance of information modelling skills in archaeology, we find that these aspects are undertreated in most university courses, either because there are no specific courses, or because existing ones are commonly instrumentalized towards specific software tools, lacking a comprehensive approach to teach information modelling skills regardless of information scope, capturing method, its final goal or the tools employed. In order to identify useful paradigms to be taught in archaeological information modelling postgraduate courses, we have conducted an empirical study within the yearly "Archaeological Information Modelling" course that we teach at the University of Santiago de Compostela. Students were asked