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Absolute dating and palaeoenvironmental evolution in Palaeolithic Mani, SW Peloponnesus

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Data derived from palaeoenvironmental indicators are considered the most reliable in back casting former environmental contexts and also, where possible, in forecasting future trends in the environment.

The peninsula of Mani, southern Peloponnesus, southwestern Greece, is a challenging area for studying past environmental changes of the Upper Quaternary, because of its nodal position between three continents, its long and multifarious coastal zone, as well as its active local tectonic regime.

A great deal of sea level oscillations and palaeoclimatic and palaeoanthropological evidence have been well-documented in the terrestrial and coastal sedimentery deposits of the peninsula, particularly for the later part of the Quaternary (Kelletat und Gassert, 1975, Imperatori, 1966). That evidence mostly comes from paleoenvironmental indicators such as raised marine notches and marine terraces, as well as from other,indicators, and is frequently associated with sites of paleoanthropological significance

An important parameter of those sedimentary deposits is their chronology. To date, the chronological framework of those processes is only loosely constrained. A first effort to produce chronological data for this area was made about twenty years ago by applying electron spin resonance (ESR) dating to speleothems from the local subsurface caverns system and other karst formations.

Here, by engaging luminescence dating, we aimed to further control former ESR chronology as well as to extend numeric dating on sedimentary formations previously non-datable through ESR alone (i.e. fluvial/deltaic sediments occurring in the area as well as anthropogenic composite deposits usually including burnt bones and fragments of stone tools). Specifically, optically stimulated luminescence (OSL) dating, combined with the single-aliquot regenerative dose (SAR) protocol, produced a number of ages that are in fair agreement with the previous ESR chronology. Current data allowed us to comprehend the chronological framework of human-palaeoenvironment interactions over the later part of the Pleistocene with higher resolution than that attained formerly by ESR, A report about the progress of this effort is here presented.

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