



ABSTRACT SUBMISSION

Reconstructing water management in terraced landscapes in Southwest Asia and the use of OSL profiling and dating in revealing human-environment interactions

EGBERTS E.^{1}, VANDAM R.¹, VERVUST S.¹*

¹ Vrije Universiteit Brussel, Brussels, Belgium

*Corresponding author

Abstract

Terraced landscapes are amongst the most significantly human-modified landscapes. This paper focuses on water management in terraced landscapes in Southwest Asia. In these complex, man-made landscapes, it is the construction, maintenance, adjustments, and abandonment -the life cycles- of water management systems that most tangibly reveal human responses to environmental changes, climatic fluctuations, agricultural needs, and socio-cultural dynamics. Unravelling the motivations behind and effects of the development of these systems, however, requires precise chronological control. Portable Optically Stimulated Luminescence (pOSL) profiling provides an invaluable tool for reconstructing detailed depositional histories of both archaeological and environmental records.

We demonstrate the application of pOSL profiling and conventional OSL dating in determining the age and life cycles of WMS in two case study areas: Hatta, UAE, and Cyprus, Greece. OSL profiling and dating is integrated with sedimentological, micromorphological, and microfossil analyses to reconstruct the impact of these systems on the local landscape. Additionally, topographical analysis and hydrological modelling are employed to assess the broader effects of these human interventions on the landscape and hydrological systems.

We discuss how OSL profiling and dating helps integrating archaeological and environmental records at various scales and how water management practices in terraced landscapes can reveal intricate human-environment interactions.

Keywords

geo-archaeology, terraced landscapes, water management, pOSL, human-environment interactions

Session

2. Natural resources and anthropised landscapes

Workshop

A16621MB - Title: Environmental multi-proxies in Southwest Asia: scale constraints and new perspectives

Type of paper

Oral presentation