Geophysical Research Abstracts, Vol. 9, 10456, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-10456

The micromorphology of Paleolithic cave sites of the Swabian Jura, Baden-Württemburg, Germany

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This contribution presents the results of almost a decade of micromorphological research in the Paleolithic cave sites of the Swabian Jura of southwest Germany and examines future aims of the continuing research project. The goal of this research project is to investigate the interaction of geogenic, pedogenic, and anthropogenic site formation processes at the Hohle Fels and Geißenklösterle sites using micromorphology.

The Paleolithic cave sites of the Swabian Jura are integral to our understanding of the timing and nature of the appearance of modern humans in Europe. Radiocarbon and other dating methods suggest that the Aurignacian began in the region ca. 40 ka BP, making Swabia one of the earliest locations for the appearance of modern humans in Europe. The Swabian cave sites are also significant because many contain Middle Paleolithic and Aurignacian layers, adding important data to our understanding of Neanderthal and modern human interaction.

Micromorphological analysis has proven integral to the continuing archaeological investigation at the sites. Identification of depositional and post-depositional processes, such as ice lensing and phosphatization, provides clues to the nature of past environments and climatic conditions during occupation of the caves. Detailed analysis of anthropogenic deposits, such as a “burned bone horizon” and other features, sheds light onto early modern human behavior, pyrotechnology, and the use of space. Future research at the sites will provide comparative micromorphological analysis between the two caves, focusing on a more detailed investigation of anthropogenic deposits and paleoclimate reconstruction.