

---

# Dinocyst assemblages and surface water conditions in the Marmara Sea during MIS 5 from two long cores

Suzanne Leroy\*<sup>1</sup>, Pierre Henry<sup>2</sup>, Fabienne Marret-Davies<sup>3</sup>, Odile Peyron, Christine Pailles, Julia Kende, Frauke Rostek, Namyk Cagatay, Kürşad Eris, Nurettin Yakopoglu, and Edouard Bard

<sup>1</sup>LAMPEA – Laboratoire Méditerranéen de Préhistoire Europe Afrique (LAMPEA), Aix Marseille Université, CNRS, Ministère de la Culture, 13080 Aix-en-Provence, France. – France

<sup>2</sup>AMU – IRD-CEREGE,, centre enseignement et recherche en geosciences et environnement – France

<sup>3</sup>University of Liverpool – United Kingdom

## Abstract

The palynological study of two long cores in the Marmara, with a special focus below the red-H1 seismic reflector, allows reconstructing terrestrial vegetation and contributing to the chronology of this lower part of the sequence. The current proposed chronology is based on inter-core correlations owing to geochemical indicators, recognition of basin-wide hiatuses, and, via pollen analysis, the possibility of correlation to the European stratigraphy from the Eemian Interglacial to the Saint-Germain II Interstadial. It allows obtaining a nearly complete record from the Saalian Glacial to the Saint-Germain II Interstadial, despite some hiatuses.

Combining the two cores and using organic-walled dinoflagellate cysts as the main proxy, allows reconstructing surface water conditions during Marine Isotopic Stage (MIS) 5. A clear main marine phase is illustrated in MIS 5e. A minor marine phase occurred during MIS 5c, supported by alkenone data. The rest of the record indicates brackish conditions. An earlier initial marine flooding in the Marmara Sea (MIS 6/MIS 5) in comparison to the Black Sea was highlighted on the base of differences in terrestrial vegetation.

The three sapropels of the Marmara Sea form when marine water penetrates at depth from the Aegean Sea. Combining surface water proxies with benthic foraminifera (shells and inner organic lining), it may be shown that the sapropels over time formed under decreasing anoxic conditions. A comparison between the two cores could even show the anoxia did not rise up to 291 m water depth.

---

\*Speaker