How to interpret Holocene palaeoenvironmental and cultural changes in SW Iberia based on the palynological record from the GeoB23519-01 core (RV METEOR cruise M152)

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The southwest of the Iberian peninsula is, due to its border position between Africa and Europe, a key territory of major geoarchaeological interest, as well as a reservoir of biodiversity and a wildlife refuge area during the Holocene. Bioclimatic conditions have been significantly unstable during this period in the Western Mediterranean. Therefore, further studies are still required to understand how abrupt climate changes such as the 8.2 and 4.2 ka cal BP events impacted societies and environment.

In November 2018 the RV Meteor cruise M-152 retrieved 19 vibracores and 4 gravity cores along the Algarve coast after mapping the bathymetry. One of these cores, GeoB23519-01, was taken 65 m below present sea level and recovered 365 cm of sediment. Four potential event layers were identified over the last 11 ka cal BP and, at least two of them, are related to tsunami deposits (ca. 4370 cal BP and AD 1755).
This sedimentary archive was analysed in a multi-proxy approach, including palynological and micropalaeontological analyses, which allow characterizing palaeoenvironmental changes along the core. However, considering the characteristics of these deposits, we raise questions about how complex this palynological record is and how it mirrors some short-term events, climate dynamics, and cultural disruptions.