

the Alboran Sea (westernmost Mediterranean Sea) at 946 m water depth. This location is bathed at present by the Western Mediterranean Deep Water (WMDW) but relatively close to the boundary with the overlying Levantine Intermediate Water (LIW). Our results show a tight connection between changes in deep water ventilation and temperature. The LGM and Heinrich Stadial 1 were characterized by good deep ventilation and cold temperatures, indicating strong WMDW convection during cold intervals. During the Bølling-Allerød and Younger Dryas (YD) periods, temperatures remained cold but the benthic assemblage shows the poorest ventilation conditions coinciding with the deposition of the early part of the last Organic Rich Layer in the deepest Alboran Sea. A re-ventilation trend started at the end of the YD extending along the early Holocene while deep temperatures increased. Oxygenation and temperature maintained relatively high values during the middle Holocene but presenting short-term variability with the warmest peaks corresponding to relatively low peaks in oxygenation. Finally, a significant change in deep waters conditions was observed around 4 ka when oxygenation enhanced while temperatures stabilized at slightly cooler values. These changes, added to the synchronous disappearance of *Cibicidoides pachyderma*, supports that WMDW became the dominant water mass bathing the studied site. This new finding opens the question if LIW was dominant during the early and middle Holocene and, in this case, why it reached deeper areas in the Alboran Sea. These observations underline the high variability of the Mediterranean thermohaline system and the need to better characterize its variability.

ID: 01903, 13.- Pliocene climate variability over glacial-interglacial timescales (PlioVAR), (Poster)

Glacial-interglacial and insolation-controlled climate and environmental variability on early Pliocene deposits from the lower Guadalquivir Basin (SW Spain)

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In this study, we present an early Pliocene (4.5-3.7 Ma) marine multiproxy record of paleoclimatic and paleoenvironmental changes from the La Matilla core drilled in the lower Guadalquivir Basin (SW Spain). The reconstruction of paleoenvironmental changes related to glacial-interglacial and insolation-controlled variability is based on micropaleontological (benthic foraminifera, pollen) and geochemical (XRF, TOC, C/N) proxies. Our record was also compared with the global benthic O isotope record and insolation curve. The estimated sedimentation rates show a distinct interval with very low sedimentation rates from 4.187 to 3.890 Ma. Below this interval, benthic foraminifera suggest an outer shelf or deeper setting with high variable fluctuations in organic matter flux to the sea floor and related oxygen depletion. Marine and continental inputs are the main possible sources of organic matter, which are controlled by glacial-interglacial conditions and insolation. Strong influence of upwelling and/or phytoplankton blooms along with cold/arid conditions occur during glacial periods with low insolation as showed by the high abundance of *Uvigerina peregrina*, and low *Quercus* abundance and C/N ratio. On the contrary, high terrestrial organic matter supply derived from river runoff and related oxygen decrease take place during interglacial periods (higher *Quercus* abundances) coinciding with high insolation. Under these humid and warm conditions, *Bulimina aculeata*, *Brizalina spathulata* and *Nonion fabum*, species feeding from degraded organic matter, TOC, C/N and Mo/Al ratios, increase significantly. Finally, above the low sedimentation rate interval, a trend towards more continental organic matter and higher riverine discharge is recorded by benthic foraminifera (higher *Nonion fabum* abundances) and geochemical proxies (higher Mo/Al, Zr/Al, Ti/Al and C/N ratios). This is consistent with a gradual sea-level fall trend and grain size increase.

ID: 01627, 23.- Regional syntheses of human-climate-environment interactions, (Poster)

Human-Environment interactions in Northern Iberian Peninsula during the Middle Holocene: the role of farmers in the landscape configuration

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