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Variability in intermediate water circulation of the western Tyrrhenian margin (NE Corsica) over the past 56 kyr

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The Marion Dufrene core MD01-2472 made of hemipelagic fine-grained sediments (silt and clays) was collected at 501 m depth on the East Corsica continental slope in 2001 and studied in detail in its 12 uppermost meters.
The correlation between sedimentological parameters (Sortable Silt), isotopic data and 14C dating allowed to establish the chronology of main climate events (Younger Dryas/YD, Bölling-Alleröd/B-A, Heinrich events/HS) on this record and to evaluate the impact of major climate oscillations on bottom water condition variability.
The sea temperature changes are identified thanks to the planktonic foraminifera assemblages. HS are marked by planktonic foraminifers with peaks of the polar species *N. pachyderma* (left-coiling), whilst interstadials are marked by warm planktonics that become very abundant during the B-A and Holocene.
The occurrence of reworked ostracod species (originating from the continental shelf) and the presence of shallow water *Elphidium/Ammonia* benthic foraminifera are used to estimate the degree of along-slope transport at the core site. This has revealed two intervals of along-slope transport also associated with coarse-grained contourites, deposited during the YD and HS2 episodes.
Intervals with *Krithe* spp. (ostracod), *C. wuellerstorfi* (benthic foraminifera) indicate bottom water oxygenation during stadials, whereas interstadials are typified by *A. acuminata* and *Paracypris* sp (ostracods) indicating low oxygenated environments. The Last Glacial Maximum is dominated by the planktonic foraminifer T. quinqueloba suggesting high surface primary productivity associated with the establishment of mestrophic bottom conditions. During the Holocene, benthic assemblages indicate oligo-mesotrophic conditions and weak hydrodynamic bottom regime.
We hypothesize that there is relationship between the Levantine Intermediate Water (LIW) intensification during cold rapid climate events and benthic fauna assemblages due to changes in: 1) bottom water ventilation, corresponding to a significant reinforcement of the LIW velocity, and 2) the export of nutrients (generating changes in trophic conditions) and/or sediment particles by bottom currents (contributing to the formation of contourites).