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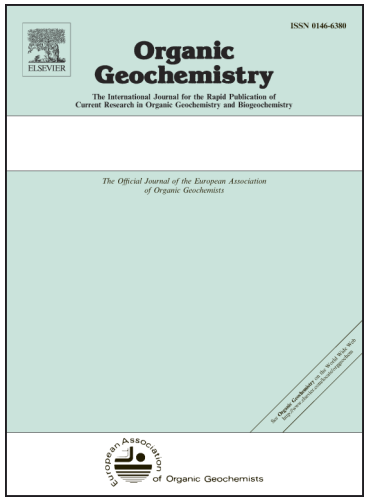

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Long-chain alkenones and related distinctive compounds in the late Miocene and Pliocene sediments from the Gulf of Cadiz, eastern North Atlantic

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ABSTRACT

Long-chain alkenones and related compounds were analyzed in Miocene and Pliocene sediments from the Gulf of Cadiz (GoC) in the eastern North Atlantic, which were obtained by Integrated Ocean Drilling Project (IODP) Expedition 339. Both GC and GC–MS analyses using non- and mid-polar columns were performed on the sediments. Isomeric *cis*-C_{37} alkenones were identified along with common *trans*-C_{37}–C_{39} alkenones. The use of a mid-polar column resulted in the complete separation of the *trans*-C_{37} tri-unsaturated alkenone and the *cis*-C_{37} di-unsaturated alkenone and thus contributed to a more precise estimation of the alkenone-based paleotemperature. The reconstructed SSTs range from 26 to 28 °C during ca. 6–3 Ma in the GoC. These variations are concordant with global climate change during the period, particularly the Pliocene