Deglacial to Holocene oceanographic changes in the Gulf of Cádiz and the western Mediterranean as revealed by coccolithophores

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Data on coccolithophore assemblages from the last 25,000 years, which can be found in sediment studies from both sides of the Straits of Gibraltar (Colmenero-Hidalgo *et al*., 2004, Simón-Baile, 2011; Ausín *et al*., 2015a, b), are reviewed in this study that is centered in the transition from the last deglaciation to the Holocene. The selected records are from core M39029–7 (Gulf of Cádiz, Atlantic Ocean), cores MD95-2043, HER-GC-T1, and CEUTA10PC08 (Alborán Sea, western Mediterranean Sea), and core MD99–2343 (north of Minorca, western Mediterranean Sea). In this area, the deglaciation interval and the early Holocene are characterized by an intensive reorganization of the water dynamics due to the climatic transition from the last glacial to the present interglacial and the subsequent rise in sea level and temperature. There were abrupt changes in coccolithophore production and preservation that were likely controlled by factors such as varying rates of surface and intermediate water exchange between the Mediterranean and the Atlantic and changes in the oxygen content of the deep-water masses. We were able to perform a west to east (Atlantic to western Mediterranean) reconstruction of the variations in temperatures and nutricline/pycnocline positions as the deglaciation progressed into the Holocene.

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