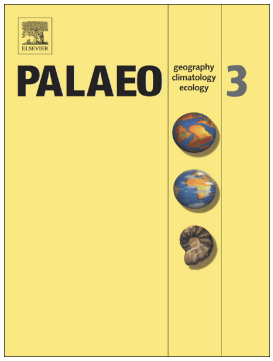

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Age refinement and basin evolution of the North Rifian Corridor (Morocco): no evidence for a marine connection during the Messinian Salinity Crisis

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Abstract

The connection between the Mediterranean and the open ocean during the Messinian and the Messinian salinity crisis (MSC) remains largely unsolved; however, such a connection is required to supply the salts required for the formation of the thick evaporite successions deposited during the MSC. A potential candidate for a Mediterranean-Atlantic connection is the northern branch of the Rifian Corridor through Morocco, but existing biostratigraphic constraints of unspecified late Tortonian – Messinian age are insufficient to test the hypothesis. We present new calcareous plankton biostratigraphic data, using among others an improved planktonic foraminiferal zonal scheme that is based on an assemblage- rather than on a typology-based taxonomic concept. The results of this study invariably reveal a late Tortonian age for the youngest open marine sediments in the individual Intramontane Basins in the central part of the North Rifian Corridor (NRC) and no marine sediments of Messinian age have been found. The high sedimentation rates and the observed shallowing in the top part of several NRC successions suggest that, although the marine connection through the NRC may have