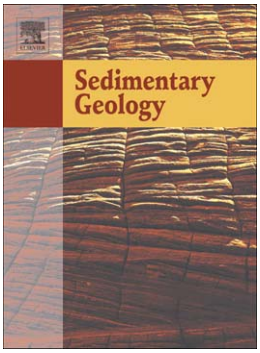

Origin, evolution and sedimentary processes associated with a late Miocene submarine landslide, southeast Spain

F. Sola, Á. Puga-Bernabéu, J. Aguirre, J.C. Braga

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Origin, evolution and sedimentary processes associated with a late Miocene submarine landslide, southeast Spain

F. Sola [a], Á. Puga-Bernabéu [b], J. Aguirre [b], J.C. Braga [b]

[a] Departamento de Biología y Geología, Universidad de Almería, 04120, Almería, Spain

[b] Departamento de Estratigrafía y Paleontología, Universidad de Granada, Campus de Fuentenueva, 18002, Granada, Spain

Abstract

A submarine landslide, the Alhama de Almería Slide, influenced late Tortonian and early Messinian (late Miocene) sedimentary processes in the vicinity of Alhama de Almería in southeast Spain. Its 220-m-high headscarp and deposits are now subaerially exposed. The landslide occurred at the northern slope of the antecedent relief of the present-day Sierra de Gádor mountain range. This is a large antiform trending east–west to east-northeast–west-southwest, which has been uplifting since the late Miocene due to convergence of the African and Eurasian plates. During the Tortonian, this relief was an island separated from the Iberian Peninsula mainland by the Alpujarra corridor, a small and narrow intermontane basin of the Betic Cordillera in the western Mediterranean Sea. The materials involved in the slope failure were Triassic dolostones and phyllites from the metamorphic Alpujárride Complex and Tortonian marine conglomerates, sandstones, and marls that formed an initial sedimentary cover on the basement rocks. Coherent large masses of metamorphic rocks and Miocene deposits at the base of the headscarp distally change to chaotic deposits of blocks of different lithologies embedded in upper Tortonian marine