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Late Pleistocene eolian-alluvial interference in the Balearic Islands (Western Mediterranean)

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ABSTRACT:

This study deals with alluvial fan and aeolian sediments interference. Although initially they are two different environments, with different processes and resulting forms, very often their interaction produces deposits that share characteristics and features from both environments, as well as, maintain inherited elements from one to each other. In this sense, the aeolian-alluvial interference is the geomorphological expression of the coincidence, disruption and/or overlapping of aeolian and alluvial environments. Climate appears to be one of the most important controls on the role and magnitude of each environment in terms of sediment supply, precipitation, runoff or aeolian transport. In this study, eight major sedimentary facies have been described involving the succession of coastal, aeolian, colluvial and alluvial environments. Carbonate sandstones, breccias, conglomerates and fine-grained deposits are the main component of these sequences. OSL dating of aeolian levels indicate that their deposition took place during the Late Pleistocene, establishing a paleoclimatic evolution of Balearic coastal areas during the last 125 ka. The sedimentological and chronological analysis of these deposits allows reconstructing the coastal environmental changes during the Late Pleistocene at the Balearic archipelago.

Keywords: Alluvial sedimentation, eolian sedimentation, alluvial-eolian interference, sea level, Late Pleistocene, Balearic Islands.