Pleistocene development of the Lower Guadalhorce river (Spain)

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The lower Guadalhorce river system is located in the Malaga Basin, Southern Spain. Pleistocene development in the Málaga Basin has been mainly continental. The most important fluvial deposits are the alluvial plains of the Guadalhorce River and several tributaries with distinctive terrace levels (Schoorl and Veldkamp, 2001). Other major tributary systems from for example the Sierra de Aguas and Montes de Málaga have left alluvial fan complexes interfingering with these terraces. Most of the fan complexes are severely dissected, sometimes more than 25 m. Consequently, at least 7 levels of fluvial terraces (remnants) have been observed along the present Guadalhorce River profile. These levels of Pleistocene terrace remnants are, contrary to those of the Pliocene deposits, all parallel to the current longitudinal profile of the Guadalhorce River suggesting a fluvial system in dynamic equilibrium with its controlling factors.
Up to this moment, the age control in the area is limited. Preliminary data from OSL dating techniques reveal difficulties with the sampling and the quartz signal. However, feldspar techniques reveal more reliable ages and indicate glacial origin of the main aggradational phases. Furthermore, from the OSL data it becomes clear that the current incised river bed (1 to 2 meters) is of Holocene age, probably due to the change in river dynamics after the construction of upstream reservoirs. Further sampling and dating is needed before coming to a more comprehensive model of terrace formation and ages.
In addition, the more detailed and more recent available DEM's show evidence of probably even more terrace levels in the area than originally assumed. Therefore, advancing in the age control, new fieldwork, photo interpretation and the latest GIS techniques in combination with a more accurate height control will allow for further development of the current Pleistocene model of the development of the Lower Guadalhorce River.

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See other references at www.lad.wur.nl or www.lapsusmodel.nl