Paleoenvironmental reconstructions and sequence stratigraphy model of a deep lake to alluvial plain system evolution of a rift basin: an example from the Paleogene Vistrenque graben (SE France)

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The Vistrenque graben is a Cenozoic rift basin located in the western part of the Camargue (SE France). It extends over 50*30 Km² and is assumed to be the deepest Cenozoic graben in the SE of France.

The Gallician sector situated in the middle compartment of the graben has a dense coverage of subsurface data and is relevant to investigate the depositional environments and the temporal evolution of the rift basin. Detailed cores and thin sections analysis of the Paleogene deposits from deep wells (Gal 1-9 & Vauvert 1) allow the identification of depositional facies associations and the stratigraphic interpretation of the sedimentary units.

Offshore lake to bench slope facies associations indicated by the dominance of gravity-driven sedimentation are frequent in the lowermost interval (*Série grise* formation) and suggest deep lake settings controlled by a relatively steep slope subjected to seismic and gravity destabilization. A major change in the sedimentation pattern has been evidenced by the development of shallow lake to palustrine facies with increasing occurrence of fluvial to alluvial facies in the overlying *Série calcaire* and *Série mixte* formation. The shift in depositional facies point to the evolution of the sedimentary system towards a shallow, gently steeped ramp type system undergoing repeated subaerial exposure. In the topmost *Série rouge* formation, the sedimentation is marked by the development of alluvial floodplain deposits across the Vistrenque graben and suggest the ultimate filling of the lake during a period of tectonic quiescence prior to the return to evaporative lake and playa environments in the Upper Oligocene (*Série Calcaréo-salifère*).

U/Pb absolute age dating yielded an early to middle Rupelian age for the subaerial exposure at the top of *Série calcaire* formation. Regional scale correlations of climatic-driven sedimentary events supported by palynological data give clues to precise the chronostratigraphic framework of the Vistrenque graben.

Mots-Clés : Paleogene, lacustrine, graben, facies, stratigraphy, U/Pb age

Merci de ne rien inscrire dans cette zone et ne pas modifier les marges des pieds de page et entêtes.