

Tectonic/Sedimentological controls on the formation of a Neogene transtensional basin in the easternmost Mediterranean, Hatay, Southern Turkey.

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The Neogene-recent NW-SE trending Antakya graben is part of the Karasu Rift system that forms a link between the major structural lineaments of the East Anatolian fault (sinistral strike-slip), the Dead Sea fault (sinistral strike-slip) and the Cyprus Arc in the Eastern Mediterranean. The formation of this graben is related to transtension in the area, a result of the movement along these faults since the Early Miocene. The aim of this research is to investigate the Neogene history of the area through a multidisciplinary (field work, seismic interpretation, geochemistry etc) study of the sedimentology and structural geology of the graben system. The nature and timing of major tectonic events can then be inferred and thus tied into regional trends in plate motions. The sedimentary succession is overall regressive from the Middle Miocene to Quaternary and large-scale facies relationships were observed in the field. Evidence for sediment instability is common throughout the succession possibly indicating that the initiation of faulting took place in the Early to Middle Miocene. Analysis of the strike of the fault planes measured shows that when the faults are considered spatially the major trend is usually oblique to the trend of the graben, while there is a secondary trend that is parallel to the basin margins. When faulting is considered by age the major trend is almost perpendicular to the basin margin, there is a change in the mean direction of faulting between the Miocene and Pliocene.