



## **Interaction between continental sedimentation and salt tectonic in Emirhan and Karayün minibasins, (the Sivas Basin, Turkey).**

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Interactions between salt tectonic and sedimentation are of primary interest to understand the formation and evolution of mini-basins, as well as the complex sedimentary architecture related to interplay between evaporite flow and sediment transport and deposition.

The Sivas basin, located on the Central Anatolian plateau (Turkey), is an elongated Oligo-Miocene sag basin that developed in an orogenic context above the complex Taurus-Pontides suture. The core of the basin presents evaporite-related structures which developed following the deposition of the thick evaporitic Hafik Formation (Early Oligocene). This part of the basin shows numerous mini-basins separated by evaporites structures such as welds, glaciers and diapirs of various shapes. The filling of these mini-basins began during the late Oligocene with continental red clastics (Karayün Fm.), capped by shallow marine deposits (Karacaören Fm.) during the Middle Miocene.

Our work is focused on the Emirhan and Karayün minibasins, which show a 4km sedimentary pile surrounded by evaporites structures. Based on sedimentary sections and geological field mapping, we defined three major sedimentological sequences characterized by first general sediment progradation, from distal facies as alluvial plain to proximal facies such as fluvial and alluvial system. Then the minibasins record a retrogradation with a progressive disconnection from the fluvial system, locally associated to lacustrine deposits. The last stage of evolution is a regional transgression, characterized by shallow marine deposit such as lagoonal facies. Despite this same trend, several differences have been identified between the two minibasins.

Six units corresponding to six facies associations are defined in both minibasins. Limits of these units coincide with an imbalance of sedimentation, evidenced by strong connection from sediment source or disconnection. The geometry of sedimentary units present an important variability, either sub-isopach or asymmetrical, indicating the migration of sediment depocenters during deposition and contemporaneous basin deformation. The minibasin boundaries are characterized by strong rotation of beds, marked by several unconformities limiting halokinetic sequences. The occurrence of halokinetic sequences evidence the important ductile flow of evaporites, which escape toward the basin boundaries during subsidence. The evaporite movements seem to influence the paleotopography related to the connection or disconnection of minibasins with sediment sources, and therefore the sediment depocenter localizations and the mini-basin evolutions. The variability of all these factors can probably justify the different filling histories between minibasins. From these observations, a paleoenvironmental evolution between the Emirhan and Karayün minibasins is drawn.