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3D architecture and Miocene evolution of the Tuz Gölü Basin in Central Anatolian Plateau, Turkey

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Central Anatolian Plateau (CAP) is the only orogenic plateau in the Mediterranean collision zone that can be compared to the evolution of its larger counterparts such as Tibet, the North American Cordilleran Plateau or the Andean Altiplano-Puna. Tuz Gölü Basin (TGB) is located in the middle of CAP and the dominant tectonic regime is extension with active normal faults. TGB is represented by a thick lacustrine sequence made up of evaporites, limestones, conglomerates, cross-bedded sandstones and mudstones with ignimbritic levels that unconformably cover the pre-Miocene basement units. Active normal faults represent a common feature within many orogens, and the negative tectonic inversion (a transition from contraction to extension) occurs often during the advanced stages of uplift. Tuz Gölü Fault, which is a normal fault with a dextral strike-slip component, bounds the TGB at the east. Our preliminary fault-slip data collected from the fault surfaces and kinematic analyses results show parallel normal faults and the tilting of the key-levels indicate that there is a graben formation due to a NE-SW extension within the area. To state the relationship between the extensional tectonics within a plateau and the formation and evolution of the plateau, the uplift rates by using structural data such as kinematic analyzes of the faults and tilting of the strata and ancient shorelines due to normal faulting will be calculated. Additionally, dating the ignimbrites in the basin using radiometric techniques will help to determine the initiation age of the normal faulting, which is one of the key observations that helps to understand the evolution of the plateau. This presentation was supported by the EUROCORES programme TOPO-EUROPE of the European Science Foundation.