



Geological evolution of Eocene Ağrı Basin (Eastern Anatolia-Turkey): Preliminary results

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Continental collision zones are sites of intense crustal deformation resulting in different geological processes such as crustal thickening, regional contraction, and volcanic activity. The East Anatolian Plateau emerges from the compression and following collision between the Eurasian and Arabian plates. Numerous basins were formed by this compressional tectonism, including the Pasinler, Muş, and Lake Van basins. The E-W trending Ağrı Basin is located at north of the collision zone formed by compressional tectonism in Eocene and shaped by the volcanism that was active since Miocene. The basins fill initiates with Middle Eocene to Lower Miocene shallow marine deposits composing of reefal limestones, mudstones, and sandstones. Ongoing compressional regime and related regional uplift caused regression and latter transition from shallow marine to terrestrial environments in Middle Miocene took place. Marine units are unconformably overlain by Upper Miocene to Pliocene lacustrine and fluvial deposits. The Quaternary sedimentation is represented by alluvial fan deposits derived from the northern margin of the basin and young fluvial sediments. Volcanic and volcanoclastic products are frequently observed in Miocene to Recent basin deposits. Currently, E-W trending thrust faults, forming the Ağrı Basin, continue to control the shape and depositional processes of the basin. Deformation of alluvial fans and channel shifting of the Murat and Seryan rivers which longitudinally passing the basin are the prominent geomorphological indicators of this tectonic activity.