



Post-Paleogene Deformation in central Anatolia, South of Ankara (Turkey)

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The closure of the northern Neo-Tethys took place between Eurasia in the north and northern edge of Afro-Arabian plate in the south since the Early Cretaceous is documented in central Anatolia. It is dated by Cretaceous ophiolitic mélanges thrust over southwards on to the upper Cretaceous-Paleogene fore-arc and foreland sequences along the northern margins of Haymana and Tuzgözü basins, respectively.

Two main deformation episodes are recognized in the region. These include post-Cretaceous-pre Miocene compressional regime and Miocene to mid-Pliocene transcurrent regime dominated extensional deformation.

The first regime is characterized by NW-SE directed compressional and contractional deformation dominated by south vergent, large wave length, asymmetric to overturned folds and associated thrust/reverse faults. Some of these reverse faults were reactivated as strike-slip faults with reverse components as evidenced by cross-cutting relationships and overprinting slickensides observed extensively in the field. Along these reactivated faults, echelon calcite veins, fault parallel meter thick silica walls with repeated phases of deformation are very common. Following the Miocene, the region is affected by a NNE-SSW to NE-SW directed extension, possibly resulted from the interaction of Tuzgözü Fault with the northwards convex splays of dextral North Anatolian Fault extending into the region. As a conclusion, the Paleogene sequences with ophiolitic mélanges are deformed under NNE-SSW directed compression related to the development of dextral strike slip tectonics during post-Paleogene-pre-Miocene period.

Keywords: fault plane slip data, transcurrent regime, post-Paleogene, central Anatolia.