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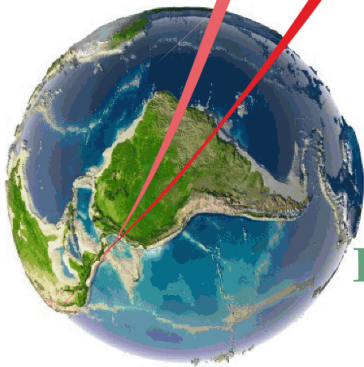
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WMIESS 2015

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Post-Miocene kinematic transition in Western Central Anatolia: preliminary results

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ABSTRACT

The continental collision between the northward moving African-Arabian and the quasi-stationary Eurasian plates gave rise to westward escape of the Anatolian plate along the North and East Anatolian Fault Systems, dextral and sinistral intracontinental strike-slip faults, respectively. At the western part of Anatolia, this escape is compensated by the Aegean-Cyprian Arc where the African plate subducts beneath the Anatolian plate. This phenomenon created four major neotectonic provinces, represented by their own characteristic deformation styles. The North Anatolian and İnönü-Eskişehir Fault Systems form the boundaries of the North Anatolian (strike-slip with compression), Central Anatolian (strike-slip with extension) and Western Anatolian (extension) provinces. The study area is located at Upper Sakarya Section of the Central Anatolian Neogene Basin, between the North Anatolian Fault System, characterized by transpressional stress regime and the İnönü-Eskişehir Fault System, showing transtensional properties. The best areas where the kinematic transition can be observed between the two fault belts are the Beypazarı and Polatlı-Sivrihisar Basins from north to south. The aim of our study is to investigate the transition from transpressional to transtensional stress regime and effects of this transition to the area between them. The foresight of our study is the existence of a transitional zone between the two fault systems rather than a sharp boundary controlled by a single fault or fault set. The paleostress analyses of the fault-slip data demonstrates that N-S to NE-SW oriented tensional stress regime performs the southern part of the İnönü-Eskişehir Fault System. This section is represented by NE- and SW-dipping normal faults. At the central part (along the İnönü-Eskişehir Fault System) transtensional stress regimes are obtained from dextral strike-slip faults with normal component. The preliminary results from southern to central part of the study area (the Polatlı-Sivrihisar basin) clearly show the foresighted transition.

Key words: Central Anatolia; İnönü-Eskisehir Fault System; Polatlı-Sivrihisar basin; paleostress analysis; kinematic transition; neotectonics.

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