



**S10 Geology, geophysics, tectonics and geodynamics of Eastern Anatolia  
Accretionary Complex (Eastern Turkey high plateau)**

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This session accepts both full papers and abstracts

The present day geological-geodynamic importance and earth science interests of Eastern Anatolia Accretionary Complex (EAAC, eastern Turkey) are:

- (1) It is high plateau elevated at 2 km, remnant of the closed Tethys Ocean. This plateau is dynamically supported by asthenospheric doming, not by collisional thickening of Arabia-Eurasia.
- (2) Slab delamination-dependent doming asthenosphere resulted in thinned, weakened and hot convergent crust (38 km) and shear-wave splitting (mantle anisotropy) between the uppermost mantle and thin crust. There is a clear tectonic gap between deep- and shallow- seated events.
- (3) Rheologically changed and very buoyant crust is subjected to intra-plate conjugate wrench tectonics (extensional and strike-/oblique- slip deformation) within intra-plate convergent setting.
- (4) The crust-seated mechanical anisotropy mainly drives fault-controlled sedimentary basin blocks in the region due to the basement reactivation of accretionary complex material and low shear strength.
- (5) In spite of doming asthenosphere, the upper crust seems to have relatively normal heat flow gradients evidenced by normal crustal Curie point depths (17 km).
- (6) Intra-plate extensional and transtensional alkaline primary basaltic magmatism and related intrusions in S is both confirmed by seismic reflection data and Helium isotopic studies. This is strange finding as completely different from subduction-accretion related calc-alkaline magmatism in N.
- (7) Intra-plate suture zones and thrust contacts (accretionary materials) are obliquely opening and alkaline primary magmas rise. Ductile shear zones along pre-existing lineaments bound basin blocks.
- (8) EAAC is a new and special type orogenic environment, presently classified by Celal Şengör (2008).

EAAC is "crust-forming orogen", known as a "small Turkic-type orogen" (Celal Şengör).