ANATOLIAN TECTONICS

ANATEC (ILP-2021)

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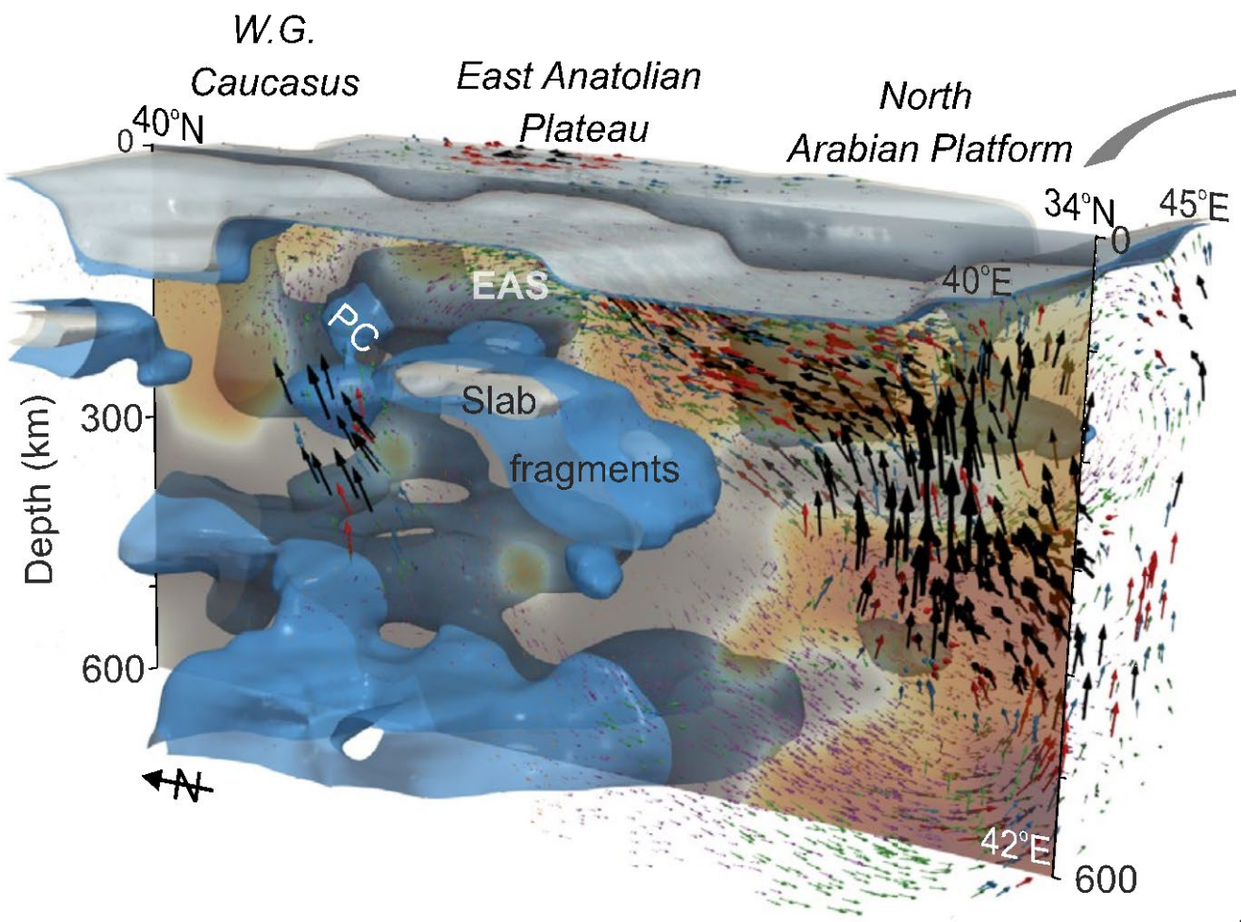
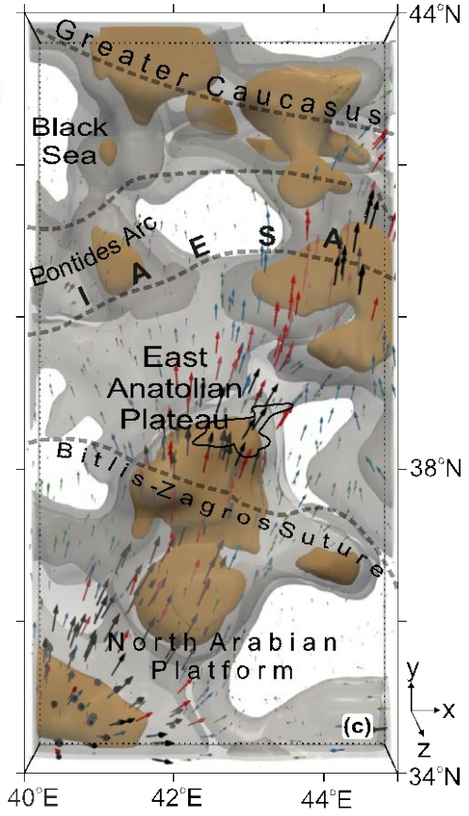
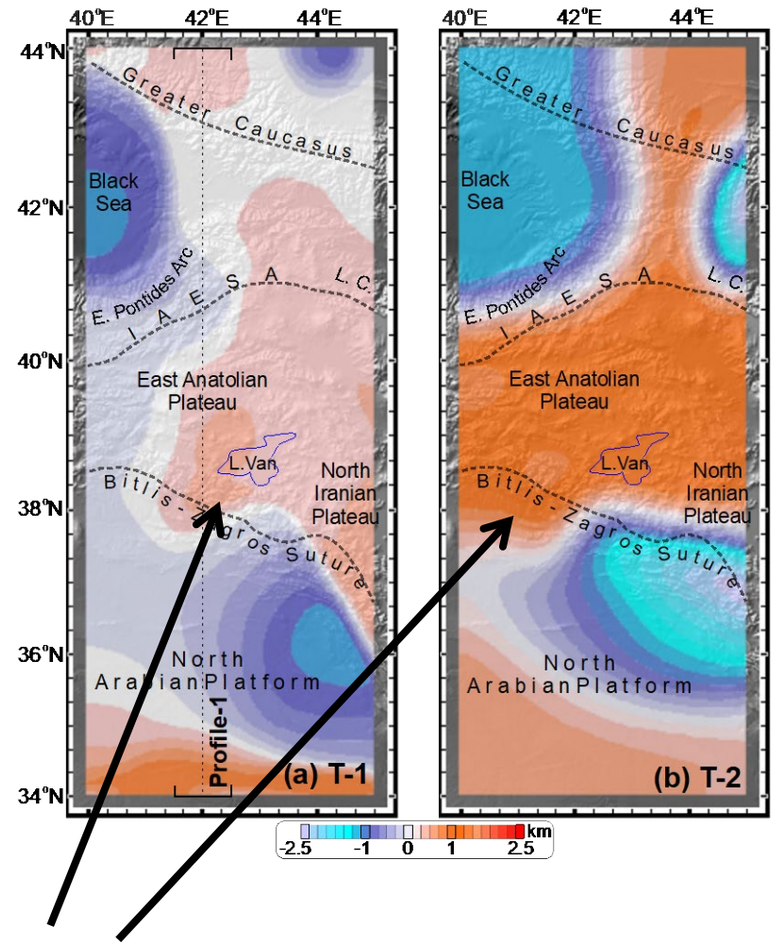
DYNAMIC TOPOGRAPHY OF EAST ANATOLIA-CAUCASUS







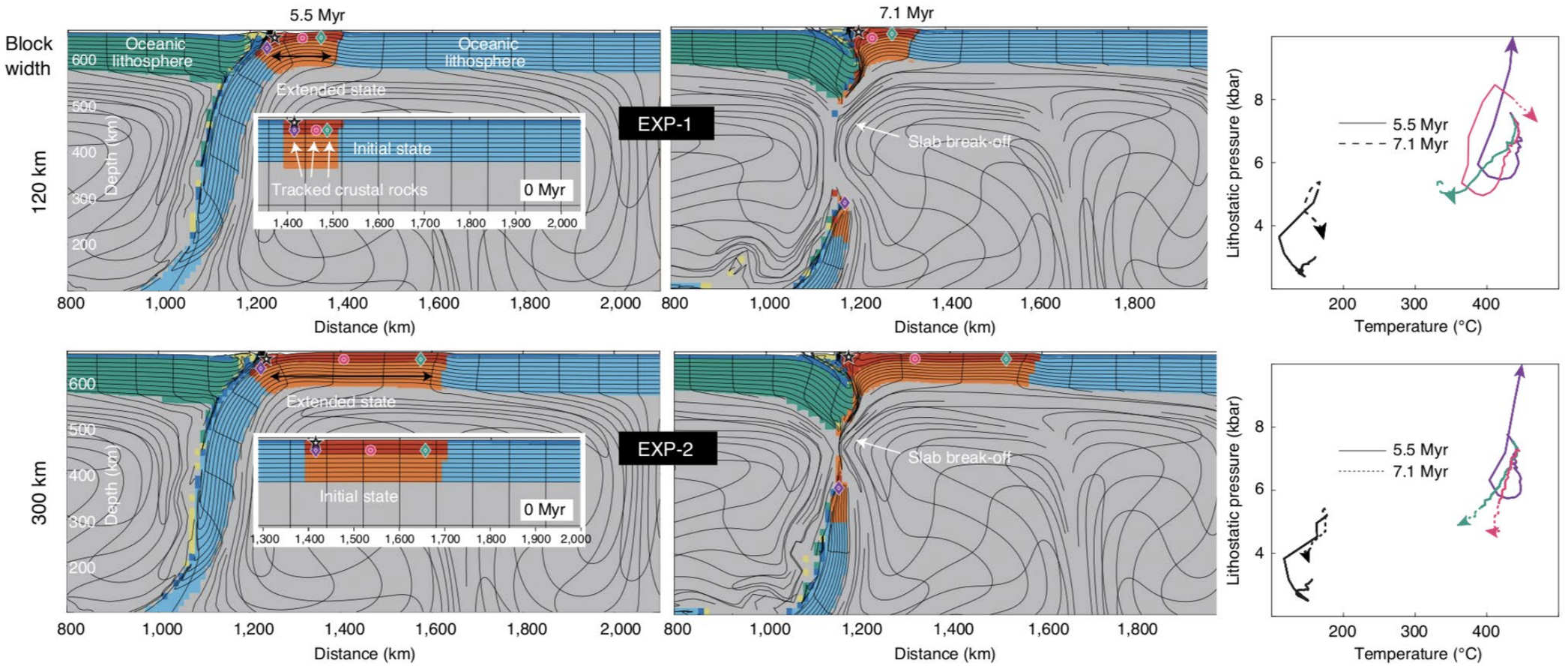
- **3-D and plan view of mantle flow** model beneath East Anatolia-Caucasus.

- Mantle flow from **south to the north** (Black sea) and local flow/circulation generated by cold downwellings

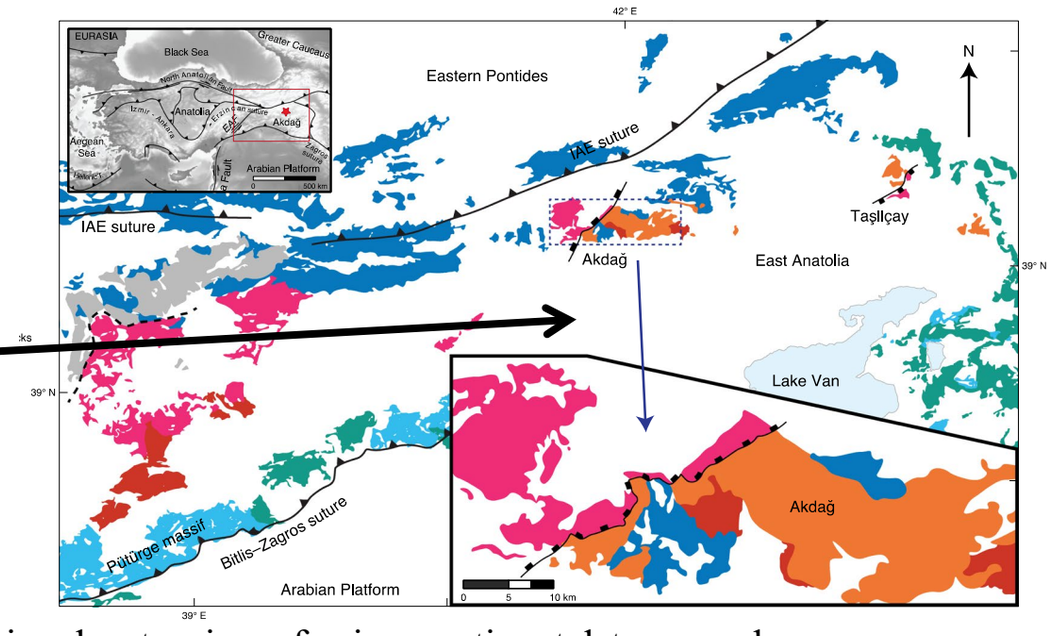
- **Positive** dynamic topography **(up to 1.2 km)** within the plateau and **negative** beneath the Black sea and the Arabian plate.

Şengül Uluocak, E., Göğüş, O. H., Pysklywec, R. N., Chen, B. 2021. Geodynamics of East Anatolia-Caucasus domain: Inferences from 3D thermo- mechanical models, residual topography, and admittance function analyses. *Tectonics*, *40*, e2021TC007031. https://doi.org/10.1029/2021TC007031.

PRE-COLLISIONAL EXTENSION IN EASTERN ANATOLA



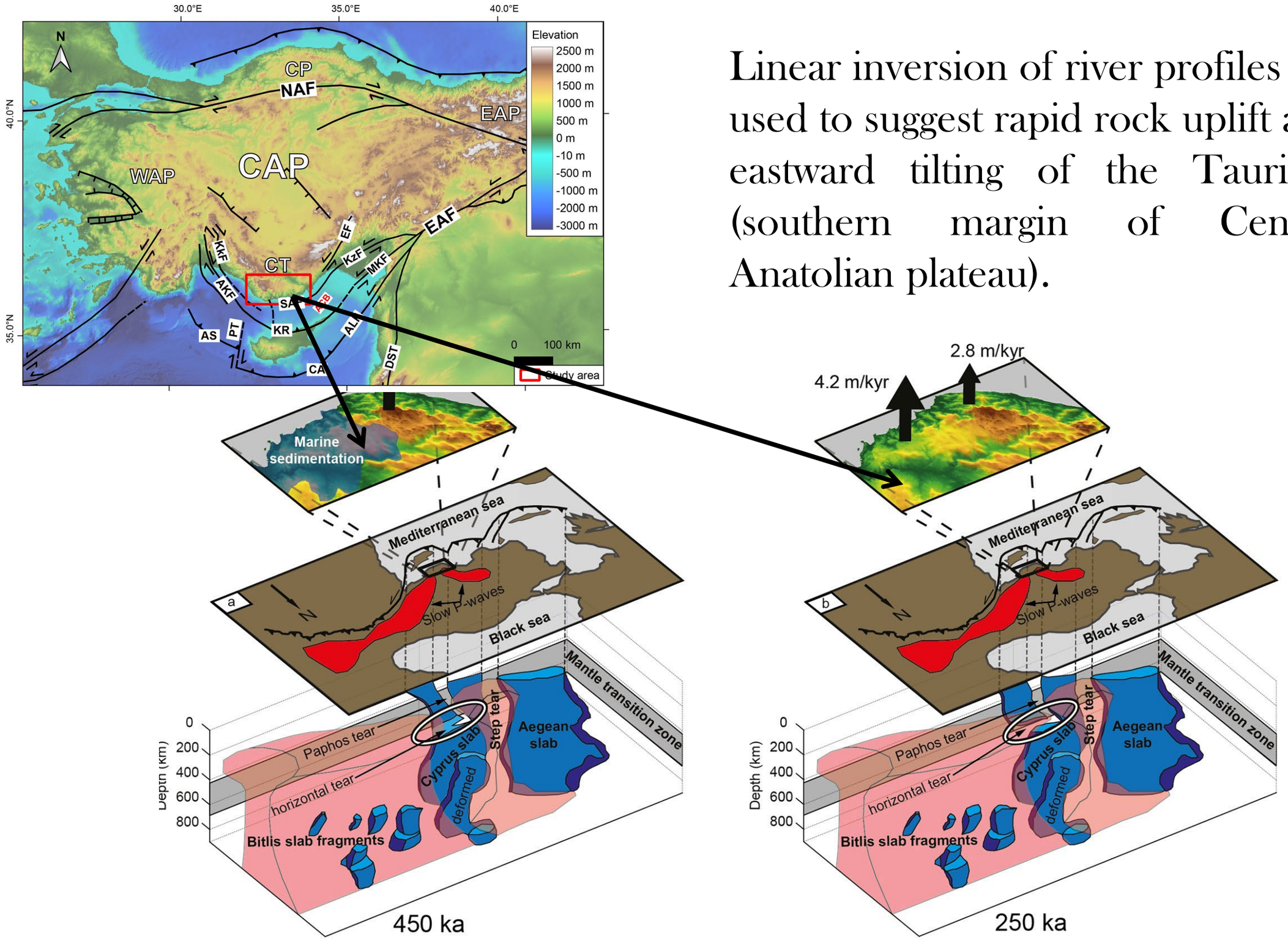
Subduction pulley hypothesis tested by numerical models explain how East Anatolia experienced crustal extension (Late Cretaceous) before Arabia-Eurasia collision (since at least 40 Ma).



Gün, E., Pysklywec, R.N., Göğüş, O.H., Topuz, G., 2021. Pre-collisional extension of microcontinental terranes by a subduction pulley. Nature Geoscience14 (6), 443–450. https://doi.org/10.1038/s41561-021-00746-9.

RAPID ROCK UPLIFT FROM RIVER PROFILE INVERSIONS AT TAURIDES (CENTRAL ANATOLIA)

Linear inversion of river profiles are used to suggest rapid rock uplift and eastward tilting of the Taurides (southern margin of Central Anatolian plateau).



Racano, S., Schildgen, T.F., Cosentino, D., Miller, S.R., 2021. Temporal and spatial variations in rock uplift from river - pro le inversions at the central Anatolian plateau southern margin. J. Geophys. Res.: Earth Surf. 126 https://doi.org/10.1029/ 2020JF006027.

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PLAN for 2023: ANATEC meeting to bring different viewpoints