



## **A single cause for uplift of the Central and Eastern Anatolian plateau?**

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> Regional observations suggest that the Central Anatolian plateau (central Turkey) has risen by more than 1 km since the Tortonian (~8 Ma) while significant crustal shortening did not occur. This uplift was preceded by the onset of widespread volcanism (~14-9Ma). The lithospheric context of these events is however unknown. For the Eastern Anatolian plateau, similar events have been attributed to the late-stage evolution of the northern Neotethys slab, resulting in delamination and slab break-off. Recent tomographic results indicate that this slab extended beneath both below the Eastern and Central Anatolian plateau just prior to delamination. We propose a new lithospheric scenario for the regional evolution in the Aegean-Anatolia-Near East region that combines a recent compilation of surface geology data with the structure of the upper mantle. Following Cretaceous-Eocene closure of the northern Neotethys, Africa-Eurasia convergence was accommodated by horizontal subduction at a trench that was located south of Anatolia. Like before the closure, the northern Neotethys slab continued to sink into the deeper mantle beneath the Izmir-Ankara-Erzincan suture. In the early Miocene (~20-15Ma), the northern Neotethys slab started to retreat southward to the trench, resulting in delamination of the lithospheric mantle. The last part of this scenario is testable, whether delamination can explain the uplift of both the Central and Eastern Anatolian plateau. In the east, uplift due to collision of Arabia is included. We use a coupled thermal-flexural model of the lithosphere. Delamination can explain the average present-day long-wavelength topography of the Central Anatolian plateau. For the Eastern Anatolian plateau, delamination explains half the present-day elevation: the other half resulted from crustal thickening. We therefore propose to refer to central and east Anatolia since the middle Miocene as "the Anatolian plateau".