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## Timing of rock-uplift and of the North Anatolian Fault development in the Central Pontides

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The Central Pontide orogenic belt marks the northern margin of the Central Anatolian Plateau and is the result of several geodynamic processes, including the subduction of the Neo-Tethys crust, the opening of the Black Sea, the continental collision between the southern Eurasian margin and the Anatolide-Tauride block, and the development of the North Anatolian Fault (NAF). Transpressional deformation and crustal thickening along the North Anatolian fault zone are thought to have generated rock-uplift rates of 0.2 – 0.3 km/Myr since ca. 400 ka within the Central Pontides based on Quaternary marine and river terraces. Moreover, data from low-temperature thermochronology suggest that an enhanced exhumation phase in the Central Pontides occurred within the last 11 Mya. However, the precise onset of this faster uplift phase, which likely reflects the timing of the development of the NAF in the Central Pontides, is poorly constrained.

In this work we define the spatiotemporal pattern of rock-uplift rates within the Central Pontides over the last ca. 10 Myr by performing linear inversions of river profiles that drain the northern, external margin of the Central Pontides. We analyze 19 different catchments that drain from the Sinop Range to the Black Sea, first applying a non-dimensional inversion on the chi-plots of the selected stream channels. We then use 21 new basin-averaged denudation rates derived from <sup>10</sup>Be concentrations in river sands to calibrate an erodibility parameter, which we use in turn to scale our chi-transformed river profiles. Our results document an increase in rock-uplift rates after 8 Ma, with peak uplift rates of around 0.15 – 0.25 km/Myr occurring between 4 and 2 Ma. Moreover, the spatiotemporal pattern of uplift suggests that faster rock uplift started first in the eastern part of the Sinop Range and migrated westward over a period of ca. 2 to 2.5 Myr. Overall, these results provide important new constraints on the timing of topographic development in the Central Pontides and the westward migration of the NAF from eastern Turkey.