



## **Integrated geothermochronology ( $^{207}\text{Pb}$ - $^{206}\text{Pb}$ , $^{40}\text{Ar}$ - $^{39}\text{Ar}$ , K-Ar, fission-track) of central Anatolian granitoids revealing continent-oceanic island arc and continent-continent collisions in central Anatolia, Turkey**

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Middle to Late Cretaceous central Anatolian granitoids intrude the supra-subduction zone-type central Anatolian ophiolite (SSZ-type CAO) and medium-to high-grade metasediments of Central Anatolian Crystalline complex (CACC), and unconformably overlain by Late Palaeocene to Early/Middle Eocene sedimentary rocks.  $^{207}\text{Pb}$  -  $^{206}\text{Pb}$  single-zircon evaporation age determinations have yielded three sub-groups, resulted from a protracted magmatism, such as (1) Cenomanian-Turonian with a weighted mean age (wma) of  $94.9 \pm 3.4$  Ma, (2) Turonian-Santonian with a wma of  $85.5 \pm 5.5$ , and (3) Campanian with a wma of  $74.9 \pm 3.8$  Ma. The hornblende and biotite  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  and K-Ar cooling ages of these granitoids are clustered between ca. 80 and 65 Ma. Such a synchronism between the hornblende and biotite cooling ages are considered to represent a fairly rapid cooling and exhumation of a mid-crustal section in central Anatolia. Apatite fission-track data, dating only the tail end of exhumation processes, reveal an apparent Early to Middle Palaeocene rapid uplift (ca.57-62 Ma) for these granitoids that is also confirmed by T-t modeling of track-length data. The central Anatolian granitoids are proposed to have generated in a post-collisional setting following the continent (TAP) and oceanic island arc (SSZ-type CAO) collision. The Early to Middle Palaeocene accelerated uplift and accompanying erosional denudation are suggested to be resulted from the continent (TAP)-continent (Eurasian plate) collision due to closure of the Izmir-Ankara-Erzincan (IAE) ocean.