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## **Geochemical characteristics and petrogenesis of Cenozoic igneous rocks in the Georgian Caucasus**

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Cenozoic magmatism in the Caucasus-Iran-Anatolia (CIA) region can simply be divided into two main stages that pre- and post-date, respectively, the onset of the Arabia-Eurasia collision. The pre-collisional stage has been generally related to the Neotethyan subduction. The post-collisional stage has been ascribed to rollback and then breakoff of the subducted slab or other geodynamic processes such as delamination of thickened lithosphere. In Georgia, located ~500 km north of the Zagros suture zone, the pre-collisional rocks, with SiO<sub>2</sub> ranging from ~45-64 wt.%, are more heterogeneous in certain incompatible elements such as potassium and LREE than the post-collisional rocks, despite the latter show a wider range of SiO<sub>2</sub> (45-72 wt.%). Thus, in contrast to the post-collisional rocks that plot in the median- to high-K calc-alkaline suite, the pre-collisional rocks are dominantly of intermediate compositions (SiO<sub>2</sub> ≈ 60 wt.%) and vary from low- to high-K calc-alkaline to shoshonitic in nature. However, rocks from both stages are characterized by the “arc signature” including enrichment in LILE (e.g., Rb, Ba) and depletion in HFSE (e.g., Ti, Nb, Ta). While isotopic determination is still in progress, Sr-Nd isotope data obtained so far from post-collisional rocks indicate that they have an isotopically uniform mantle source similar to other post-collisional magmas in the CIA region. We are also working on precise dating of the pre-collisional rocks. The result, together with geochemical and isotopic constraints, will hopefully help us better understand the petrogenesis that we suspect to have affiliated with a back-arc system.