



## **Provenance of Late Cretaceous to Miocene tectonically controlled sedimentation at the present contact between the Dinarides and the Pannonian basin**

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The NE margin of the Dinarides at their junction with the Carpatho-Balkanides experienced a complex, poly-phase structural and thermal evolution from the end of Cretaceous times onwards. During the phases of Late Cretaceous–Paleogene collision contractional flysch trough was formed in the thrusting contact between Adriatic (i.e. Dinarides) and the overlying European (i.e. Carpathians) derived units. Detrital ZFT analyses of the syn-kinematic flysch sediments yielded Maastrichtian (at ~70 Ma) provenance ages indicating rapid tectonic erosion of the European-derived hanging-wall, comprised of the “Banatitic” magmatites and the Serbomacedonian metamorphic basement, as the dominant source of these sediments. However, the modelling of apatite fission track data obtained in the same syn-kinematic flysch sediments is suggesting existence of another Late Eocene exhumation event (at ~40 Ma), which infers repetitive contractional episodes and continuous Paleogene exhumation along the Dinarides margin. The subsequent Early to Late Miocene (between ~24 Ma and ~10 Ma) extension of the Pannonian Basin occurred along a series of N-S oriented asymmetric simple-shear detachments, which reactivated the inherited Cretaceous–Eocene collisional contact between European and Adriatic units along the entire Dinarides margin. Rocks belonging to the Dinarides margin, previously buried to intermediate crustal depths by the Europe–Adria collision, were rapidly exhumed in detachments footwalls, locally in core-complexes, eroded, transported, and deposited in sediments of the adjacent Miocene basins.