

## FROM NAPPE STACKING TO EXHUMATION: CRETACEOUS TECTONICS IN THE APUSENI MOUNTAINS (ROMANIA)

REISER, Martin\* (1); SCHUSTER, Ralf (2); SPIKINGS, Richard (3); TROPPER, Peter (4); FÜGENSCHUH, Bernhard (1)

1: Institut fuer Geologie, Universitaet Innsbruck,; 2: Geologische Bundesanstalt, Wien; 3: Department of Mineralogy, University of Geneva,; 4: Institut fuer Mineralogie und Petrologie, Universitaet Innsbruck

[martin.reiser@uibk.ac.at](mailto:martin.reiser@uibk.ac.at)

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New thermochronological data in combination with P-t estimates and kinematic analyses from the Apuseni Mountains provide new constraints on the tectonometamorphic evolution in the larger context of the Alps-Carpathians-Dinarides system of orogens. Time-temperature paths from the structurally highest basement nappe of the Apuseni Mountains in combination with sedimentary data indicate exhumation and a position close to the surface after the Late Jurassic emplacement of the South Apuseni Ophiolites. Early Cretaceous Ar-Ar muscovite ages from structurally lower parts in the Biharia Nappe System (Dacia Mega-Unit) show cooling from medium-grade conditions. NE-SW trending stretching lineation and associated kinematic indicators of this deformation phase (D1) are overprinted by top-NW-directed thrusting during D2. An Albian to Turonian age (110--90 Ma) is proposed for the main deformation (D2) that formed the present-day geometry of the nappe-stack and led to a pervasive retrograde greenschist-facies overprint. Thermochronological and structural data from the Bihor Unit (Tisza Mega-Unit) allowed to establish E-directed differential exhumation during early Late Cretaceous times (D3.1). Brittle detachment faulting (D3.2) and the deposition of syn-extensional sediments indicate general uplift and partial surface exposure during the Late Cretaceous. Brittle conditions persist during the latest Cretaceous compressional overprint (D4).