discussed. The sampled shear zones are low-grade mylonites and phyllonites and because of their deformation temperatures most of the ages obtained are interpreted to reflect neo-/recrystallization of synkinematic minerals, therefore giving deformation ages. Steep and often conjugate shear-zones in the Chamonix zone between the eastern margin of the Aiguilles Rouges massif and the western margin of the Mont Blanc massif overprint the main Alpine fabric related to NW-directed shear. Ages from such shear zones indicate a change from intensive NW-directed shearing between Mont Blanc and Aiguilles Rouges massifs to more coaxial deformation between the two massifs around 14.5-15 Ma. This is interpreted to be related to a collective updoming of the two massifs from Middle Miocene times. In the Mont Chétif basement slice on the eastern side of Mont Blanc, dextral + E-side up oblique-slip to transcurrent movements dominate, with a tendency toward a stronger strike-slip component with time. Rb-Sr microsampling ages of 27-30 Ma from the Mont Chétif reflect early stages of deformation in the study area in the footwall of the Penninic thrust in Oligocene times, whereas Early Miocene $^{40}Ar/^{39}Ar$ ages (18-20 Ma) from the same sample are interpreted to reflect cooling below the closure temperature of the $^{40}Ar/^{39}Ar$ system of white mica. However, the youngest sample from the Mont Chétif basement yielded a Late Miocene age, suggesting that subsequent folding that overprints the shear zone must have taken place after 9.5 Ma. One age spectrum from Col de la Seigne of 28-35 Ma fits well with Oligocene activity along the Penninic thrust. A NW-verging shear zone between the Mont Blanc granite and Mont Blanc paragneiss, close to Champex-Lac and coinciding with the Faille du Midi, yields ages between 15-20 Ma. The age results provide key time constraints for our new model for the structural and temporal evolution of the Mont Blanc area during the Neogene.

Development of nappe stacking in the eastern Tauern Window with special attention to new Rb/Sr biotite and $^{40}Ar/^{39}Ar$ white mica ages, and peak-temperature data

Favaro, S.[1], Schuster, R.[2], Scharf, A.[1], Hawemann, F.[1], Gipper, P.[1], Handy, M.R.[1] & Oberhänsli, R.[3]

[1] Departement of Earth Sciences, Freie Universität Berlin, Malteserstrasse 74-100, 12249 Berlin, Germany (silvia.favaro@fu-berlin.de)
[2] Geologische Bundesanstalt, Neulinggasse 38, A-1030, Vienna, Austria
[3] Universität Potsdam, Institut für Erd- und Umweltwissenschaften, Karl-Liebknecht-Str. 24-25, 14476 Potsdam-Golm, Germany

The Tauern Window (Eastern Alps) exposes a Paleogene nappe stack comprising European derived units (Subpenninic units) and Penninic units (Glockner, Matrei nappes) below the Austroalpine units. The Subpenninic units form the cores of two domes at the eastern and western ends of the Tauern Window. Our work focuses on the Eastern Tauern Dome where a peak-temperature of c. 612° C was recorded in the core of Subpenninic units and c. 500°C was measured at its rim in contact with the Penninic nappes. Peak temperatures at the contact of the Penninic units with the Austroalpine nappes are ≤ 450°C. Grt-st, grt-bt and bt-wm thermometers yield temperatures in the range of 596 to 630°C, calculated for a mean pressure of 9.2 kbar obtained with the chl-bt-ms geobarometer. These temperatures lasted at least until 25.4 ± 2.5 Ma according to a $^{147}Sm/^{144}Nd$ formational age on garnet that overgrew the main foliation related to nappe stacking but that predates doming.

The Eastern Tauern Dome is itself divided in two smaller domes (Sonnblick, Hochalm) and the intervening tight Mallnitz synform. Reddy et al. (1993) proposed that the Sonnblick Dome cooled earlier than the Hochalm Dome based on distinct clusters of Rb/Sr biotite ages in the cores of the Sonnblick and Hochalm domes. However, when combined with this existing dataset, our new $^{87}Rb/^{86}Sr$ biotite ages point to simultaneous cooling of the domes to below the closure temperature of this isotopic system (300°C). $^{87}Rb/^{86}Sr$ biotite ages decrease from 23-20 Ma in the northwest to 19-16 Ma in the southeast and do not vary in a transect across the Mallnitz Synform. Also, $^{87}Rb/^{86}Sr$ white mica ages range from 30-26 Ma to 25-20 Ma and apatite fission track data young in the same direction. A SE-ward increase in the intensity of mylonitic shearing along strike of the Mallnitz Synform is interpreted to be a manifestation of stretch faulting that was kinematically linked to top-E to–SE directed normal faulting along the central part of the Katschberg Shear Zone System (KSZS, SCHARF et al., 2013). We attribute the SE-ward decrease of the $^{87}Rb/^{86}Sr$ biotite cooling ages to an increased component of tectonic unroofing towards the eastern and southern margins of the Tauern Window. Moreover, new $^{40}Ar/^{39}Ar$ laser ablation data on individual mica grains in a transect oriented perpendicular to the central part of the KSZS yields ages between 31 and 13 Ma in the footwall. Nine samples were analyzed and their microstructural setting brackets the ending of rapid exhumation. The ages lead to the conclusion that ductile shear along the KSZS started sometime before 20 Ma at a temperature of more than 470°C and ended no later than 17 Ma at the contact of the KSZS with the Austroalpine unit above.

The consideration of structures in the Tauern Window combined with our new garnet age constrains duplex formation to have occurred before 25 Ma. Moreover, there is no difference in the cooling histories of the Hochalm and Sonnblick domes, indicating that the Eastern Tauern Dome was exhumed as a single unit during doing and coeval extensional exhumation in the footwall of the KSZS. Shearing along the KSZS started no later than 20 Ma and ended at about 17 Ma. The onset of rapid cooling related to fast exhumation is still poorly constrained, but probably began no earlier than 21 Ma according to stratigraphic criteria in the Giudicarie Belt of the Southern Alps (SCHMID et al., 2013).

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Jurassic to Early Cretaceous basin evolution of the northern Transdanubian Range: structural influences of two oceans

Fodor, L.I.[1], Sztanó, O.[2], Kövér, Sz.[1] & Főzy, I.[3]

[1] Geological, Geophysical and Space Science Research Group of the Hungarian Academy of Sciences at Eötvös University, Budapest 1117 Pázmány P. sétány 1/C, Hungary (lasz.fodor@yahoo.com)

[2] Department of General and Applied Geology, Eötvös University, Budapest 1117 Pázmány P. sétány 1/C, Hungary

[3] Department of Palaeontology, Hungarian Natural History Museum, 1431 Budapest, Pf. 137, Hungary

The northern Transdanubian Range (TR), Hungary occupied a paleogeographical position between the Neotethys and Alpine Tethys during the late Jurassic and early Cretaceous. Structural events in the two oceanic domains strongly controlled the basin evolution.

We used field structural measurements, mapping, sedimentological and stratigraphical analysis to date the succession, reconstruct the basin geometry and structural evolution. To place structural data in Alpine frame, an 80–50 counterclockwise Cenozoic rotation should be considered.

Jurassic basin evolution started with differentiation of the Triassic carbonate platform in the Sinemurian. Syn-sedimentary dykes and faults prove extensional deformation related to early rifting events of the Alpine Tethys. The direction of extension was NNE–SSW at present position. Different Jurassic successions indicate map-scale faults: WNW–ESE