these areas can be considered as part of a former "conjugate" rift system and if sedimentation shows evidence of continuity along composite sections across these domains. The two margins are characterized by sudden drowning of a Late Triassic to Early Jurassic shallow-water carbonate platform into a Lower Jurassic carbonate ramp. In the Ligurian Prepiedmont the drowning event is dated as Lower Hettangian to Lower-Middle Sinemurian and it is characterized by the deposition of discontinuous condensed deposits (Fe-Mn hardgrounds). This level has a good correlation potential through both the sections. The following external-platform to ramp carbonates deposited in different basins, more or less subsident (e.g. Arnasco-Castelbianco). Locally, they are followed by huge amounts of coarse breccias, fed by the progressive activation of fault-scarps during the ongoing deformation in highly subsiding troughs. At the same time, ramps with moderate gravity flows formed in the areas directly facing the future exhumation zone (i.e. Lencisa, Bardella sections) testifying its progressively deepening trend. The sedimentation was interrupted by successive episodes of condensation, in the Upper Sinemurian and in the Pliensbachian. At the scale of the basin, these events show quite a good correlation considering selected areas. Successively, accommodation space was created especially above the major exhumation fault(s). The portion of the margin closely-facing the exhumation area was dismembered in blocks, (extensional allochthons; e.g. Piz Alv, Piz Bardella) while just above the main exhumation area, a depression formed (outer trough) hosting a composite sedimentation made up of deep water deposits (calcschists) and slices of exhumed serpentinite (Montaldo Unit). Thus, despite of all the complications that may be introduced considering local basin subdivision, the general stratigraphic framework in the two study areas is pretty well comparable and shows a first-order similar evolution of the sedimentation during the initial stage of rifting, beginning to clearly differentiate only after the exhumation stage. In addition, we recognize some new elements for a more accurate stratigraphic correlation of synrift deposits. These data lead us to consider that the studied sections can be approached as "conjugate" domains within an evolving rift system, with a good degree of continuity in stratigraphy and in sedimentological features.

Geochronology of Alpine shear zones in the Mont Blanc region using $^{40}Ar/^{39}Ar$ step-heating and Rb-Sr microsampling techniques

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Timing of deformation in the Mont Blanc massif in the western Alps and the understanding of its structural evolution, especially with regard to its recent exhumation, remains a matter of debate. Ductile deformation in the Mont Blanc region lasted from Oligocene to Late Miocene times, resulting in the development of the Helvetic nappe stack, with the Mont Blanc massif forming a crustal-scale fold-nappe. Generally NW-directed thrusting interacts with dextral transcurrent movements related to the Rhône-Simplon fault along the Chamonix valley and the Val Ferret on the internal side of the Mont Blanc massif. This case study presents geochronological data from 11 sample locations collected at 6 key areas in the Mont Blanc-Aiguilles Rouges region, which represent different stages in the tectonic evolution of the area. The $^{40}Ar/^{39}Ar$ step-heating method on white mica and the Rb-Sr microsampling method on texturally-controlled, µg-sized white mica - calcite pairs in textural equilibrium were applied to samples collected from individual low-grade shear zones with the aim of obtaining direct constraints on ages of deformation from synkinematically grown or recrystallized minerals. The results are critically assessed with respect to cooling versus neocrystallization ages and their assignment to distinct periods of tectonic activity in the Mont Blanc area is 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

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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