

A NEW, DETAILED TECTONIC MAP OF SUBDUCTION-EXHUMATION STRUCTURES IN THE CENTRAL TAUERN WINDOW

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Tauern Window

We present a new tectonic map of the central Tauern Window based on a compilation of existing geological maps and literature. To this we added numerous details that are significant for understanding the subduction-exhumation history of high-pressure units in the central part of the Window.

Changes include the following features: (1) subdivision of the oceanic Glockner nappe system into the Glockner nappe s. str. containing HP-assemblages and the Rauris nappe which does not; (2) subdivision of the continental Modereck nappe system into the Modereck nappe s. str. and the underlying Trogereck nappe; only the former unit experienced HP-metamorphism during Alpine orogeny.

This re-interpretation reveals along-strike and orogen-perpendicular discontinuities in the structure of the tectonic units: (1) the Rauris nappe is the lower oceanic unit and wedges out to the west; (2) the Glockner nappe s. str. is the upper oceanic unit, overlying both Eastern and Western Tauern basement domes, but wedging out to the north; (3) the Modereck nappe system units are sandwiched between the oceanic Glockner and Rauris nappes, but wedge out to the west and north. This reveals a recumbent sheath-like fold structure (the Seidlwinkl fold) that closes to the N, in accord with top-N shear-sense indicators that syn- to post-date HP-assemblages (blueschist-facies).

The Modereck nappe system represents the Mesozoic distal margin of the European Plate. Its HP- (blueschist-facies) assemblages in Mesozoic sediments as well as in the adjacent Glockner nappe s. str. reveal that both units were brought into contact at subduction-zone depths. The Seidlwinkl fold clearly overprints this subduction-related nappe contact. It also emplaced both units onto the lower-grade Rauris unit. Therefore we interpret the Seidlwinkl fold as a structure that formed during the exhumation of the HP-units from deep (ca. 60 km) to shallow crustal levels within the Tertiary subduction channel.