

Stratigraphy and provenance of the Tauern Flysch (Penninic Unit, Austria)

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The provenance and the stratigraphic correlation of the metamorphic flysch-like sediments at the northern border of the Tauern Window (Penninic unit, Salzburg) represent an unsolved conundrum of the Eastern Alps. There are several models trying to explain the derivation of these deep water-mass flow-sediments. According to older models (FAUPL & WAGREICH, 2000) the Tauern Flysch may represent a northern Penninic deep-sea-trough, classifying these deposits equated to the non-metamorphic Rhenodanubian Flysch. More recent models consider an original position south of the Subpenninic units, and therefore a southern penninic or even austroalpine position (SCHMID et al., 2013). Provenance of the Tauernflysch may help to solve the question of its palaeogeographic and palaeotectonic derivation, mainly by making comparisons of heavy mineral associations and bulk geochemistry analysis data. Another research question is the degree of metamorphism and how strong is the possible influence of the SEMP (Salzach–Ennstal–Mariazell–Puchberg) Fault.

Fieldwork included the sedimentological logging of 2 main profiles (one 780 m, two 400 m) and 18 single profiles in the area of the Wolfbachtal, southwest of Taxenbach, Salzburg. Almost continuous outcrops of metamorphic flysch deposits along forest roads and the Wolfbach streambed can be found, including meta-black shales, turbiditic meta-sandstones, meta-breccias and marbles. Analysis-methods used on the altogether 50 samples are petrographic microscope analysis, x-ray diffraction, heavy mineral associations, micro probe analysis of heavy minerals, rock bulk geochemistry analysis and principal component analysis. Microstructural microscope analysis indicates upper Green schist facies with temperatures around 450°C. Due to these conditions the results of the bulk geochemistry analysis are not fully reliable and do not give clear results. Nevertheless sedimentary structures, confirming the sedimentary nature of these meta-sediments, can be observed, due to the main deformation mechanism being pressure solution. Provenance analysis and geochemical classification are still in progress.

FAUPL, P. & WAGREICH, M., 2000. Mitteilungen der Österreichischen Geologischen Gesellschaft, **92**/1999, 79–94.

SCHMID, S.M. et al., 2013. Swiss Journal of Geosciences, **106**/1, 1–32.