Geophysical Research Abstracts, Vol. 7, 08830, 2005
SRef-ID: 1607-7962/gra/EGU05-A-08830

Tectonomorphic evolution of the Kreuzeck Massif, Austroalpine, Austria

C. Dekant (1), W. Siebel (1), M. Putis (2), W. Frisch (1), G. Markl (1)

(1) Institut für Geowissenschaften, Eberhard Karls Universität, Tübingen, (2) Comenius University, Departement of Mineralogy and Petrology, Bratislava (christian.dekant@uni-tuebingen.de)

Our project aims to reconstruct the metamorphic history of a typical crustal block of the Austroalpine realm. The studies focus on the distinction between the two Alpine metamorphic events during the Cretaceous and the Tertiary respectively. Furthermore the pre-mesozoic history of the area is of interest.

During eoalpine orogenesis the Austroalpine units were in the position of the subducted slab. Pressure estimates for eclogites in the so-called Polinik-unit of the Kreuzeck Massif yielded around 1.1 Gpa [1]. During Tertiary orogenesis the Austroalpine units formed the lid of the upper plate. The Austroalpine crustal stack collided at that time with the European continental margin and weren't subject of intense metamorphism. Mainly in Miocene times, the Kreuzeck Massif was tectonically active during lateral extrusion, which caused strike slip faulting, and differentiated uplift, and erosion of internal blocks [2].

U-Pb-dating of zircons from paragneisses yielded lower intercept ages of around 550-600 Ma indicating a Panafrican high temperature event, which is also known from other regions of the Austroalpine [3]. Preliminary Sm-Nd-investigations on garnets from eclogites of the Polinik-unit yielded Variscan ages.

[1] Putis *et. al.* (2002), Slovak. Geol. Mag. 8(1):65-87; [2] Frisch *et. al.* (2000), Tectonophysics 327, 239-268; [3] Söllner and Hansen (1987), Jb. Geol. BA 130:529-569.