

Sicht problematisch stellen sich möglicherweise tieferreichender Gipskarst sowie die Querung einer hochmineralisierten Thermalquelle dar.

Bei beiden Projekten wurden die geologischen Kartierungen im südamerikanischen Sommer 2008 durchgeführt. Im nächsten Sommer werden die Erkundungsprogramme (Bohrungen und Geophysik) durchgeführt.

### **The Lavanttal fault - tunnelling through a major fault zone of the Eastern Alps**

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Miocene lateral extrusion of the Eastern Alps resulted in the formation of a pronounced fault pattern which moulds the present day morphology of this area (FRISCH et al. 2000 a,b). One of these faults is the still active Lavanttal fault as a segment of the Pöls-Lavant fault, along which the Miocene Lavanttal basin formed in a probable transtensional regime. A neotectonic dextral sense of shear has been confirmed for the northern segment of this fault zone by analysis of focal plane mechanisms (REINECKER & LENHARDT 1999).

The exploratory tunnels Paierdorf and Mitterpichling, as part of the site investigations for the Koralm Tunnel cross parts of this fault zone and the sediments of the Lavantal basin respectively. During the tunnel headings the zone like character of this fault has been proven, which caused mixed face conditions over wide stretches for the Tunnel Paierdorf which crosses the boundary of the Neogene rocks to the metamorphic rocks of the Austroalpine basement of the Koralpe. Strike-slip faulting followed by normal fault kinematics could be documented during tunnel heading by fault-slip data. This is in accordance with a scheme for the tectonic evolution of the Koralpe (PISCHINGER et al. 2008, in press) which was developed during the site investigations for the Koralm Tunnel and associated further research from kinematic discontinuity analysis (fault-slip analysis) on drill cores (VANEK et al. 2001) and in outcrops. Several associated faults have been passed by the Tunnel Mitterpichling, which is entirely situated in the sediments of the Lavanttal basin, cross cutting a sedimentary record from the Badenium up to the Pliocene.

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### **The International Handbook on Military Geography – a benchmark in military geosciences**

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In 2006, the Military Geographic Service of the Austrian Armed Forces, in cooperation with the University of Vienna presented the first „International Handbook Military Geography“ at the NATO & Partnership for Peace „Geospatial Conference“ in Brussels (MANG & HÄUSLER 2006).

Military application of geosciences in war and peace traditionally has been organised under the umbrella of „military geography“. It made use of knowledge in cartography, geodesy, geography, geology, geophysics and other geo-related sciences. Referring to the definition of Collins „military geography“ concentrates on the influence of physical and cultural environments over political-military policies, plans, programs, and combat/support operations of all types in global, regional, and local contexts. Jackson defined „military geology“ as those branches of the earth sciences, especially geomorphology, soil science, and climatology that are applied to such military concerns as terrain analysis, water supply, cross-country movement, location of construction material, and building of roads and airfields, and the application of geological sciences to decision-making processes required by the military command. When geo-informatics became a new discipline, and high-resolution satellite images were widely used, the use of classic cartographic hard-copy products, as formerly provided by military cartographers, decreased. Accordingly, the former NATO „Military Geography Conferences“ were then termed NATO Partnership for Peace (PfP) „Geospatial Conferences“, and geography as such was not any more the leading geoscientific discipline supporting the joint commands of army, navy and air force. Consequently, the „military geographic“ organisation of the German army was transformed into an office for „GeoInformation“. This development demands additional endeavour towards clear definitions how military geosciences contribute to military decisions, and how they are termed. Since 1992 the Petersberg tasks comprise actions of humanitarian, peacekeeping and peacemaking nature. As many members of the EU are supporting NATO, new challenges arose for military geosciences at global perspective, and after 9/11 military operations are not any more only regional ones.

The „International Handbook Military Geography“ (MANG & HÄUSLER 2006) consists of 52 papers by authors of seven different European countries. Its articles are divided into three thematic blocks, namely „Basics and Tools“, „Tasks and Applications“, and „Perspectives and Horizons“. We want to recall that „Defence Geology“ is a working group of the Austrian Geological Society encompassing geoscientists from universities, technical universities, technical bureaus, and civil engineers. Today „Defence Geology“ can be understood in a wider sense as Fasching introduced „geo-security“, and in 2005 the NATO „Security through Science Program“ hosted meetings of the Environment and Security Initiative.

MANG, R. & HÄUSLER, H. (eds.) (2006): International Handbook Military Geography. - 591 p., (Arbeitsgemeinschaft Truppendienste; Ministry of Defence), Vienna, Austria.