

Workshop from February 16 to March 1, 1998 on Bieler Höhe Pass (Austria)

34 participants from 7 nations gathered for the first workshop of the Working Group on High Mountain Cartography on Bieler Höhe pass / Silvretta area in Austria (Germany 10, Austria 9, Switzerland 8, Poland 3, Italy 2, USA 1 participants). The working group has been established in 1996 during the cartography congress in Interlaken, Switzerland. Its aims are the redefinition of high mountain cartography, its promotion and the scientific exchange between international researchers. The workshop covered a broad thematic spectrum in order to survey the extent of the whole domain. Due to the theme it was obvious to hold this workshop in a high mountain area. Accommodation and the conference room at the Silvrettadorf (Madlenerhaus 1986 m above sea level) have been ideal for this event. Based on the incoming abstracts, the workshop was divided into three thematic sessions with a total of 22 contributions. They are summarized below:

The first session was devoted to **topographic cartography**, a classical domain of high mountain cartography. Representatives of Swiss and Spanish map authorities as well as *Th. Wintges* (Technical College of Munich, Germany) and *M. Buchroithner/S. Kirschenbauer* (Technical University of Dresden, Germany) pointed out that nowadays the availability of a precise and morphologically correct digital elevation model is a vital element for the production of topographic maps and map related representations. This could also be affirmed by *L. Hurni/A. Neumann* (ETH Zurich and University of Vienna) and *J. Gilgen* (Federal Office of Topography, Berne) who presented semi-automatized and graphical methods for digital cliff drawing without the aid of digital elevation models. *H. Winkler* (Munich, Germany) came to the same sobering conclusion when examining German ATKIS data of cliff areas. Two papers by *M. Hauser* (Zurich, Switzerland) and *R. Kostka* (Graz, Austria) presented mapping projects in the Pamir mountains, on Kamchatka peninsula and in the Everest area.

In the second session, aspects of **thematic cartography** have been discussed. Three papers by *R. Heiland* et al. (Technical University of Graz, Austria), *A. Kääh* (University of Zurich, Switzerland) and *Ch. Häberling* (ETH Zurich, Switzerland) dealt with recording, analysis and visualization of glacial phenomena. *Ph. Schoeneich* (University of Lausanne, Switzerland) and *D. Gruber/K. Kriz* (University of Vienna, Austria) discussed DEM-based applications in geomorphological mapping. Another three papers by *M. Galanda/K. Kriz* (University of Vienna, Austria), *N. Prechtel* (Technical University of Dresden, Germany) and *J. Drachal* (Warsaw, Poland) presented mapping projects in the Silvretta area (avalanche hazard map), Altai mountains (environmental mapping) and Tatra mountains (tourist maps).

In session three, research projects in the field of **map-related representations and multimedia cartography** have been discussed. *M. Oldenburg* (Technical College of Karlsruhe, Germany), *W. Gimplinger* et al. (St. Pauls, Italy) and *G. Waich/M. Seger*, (Technical University of Dresden, Germany and University of Klagenfurt, Austria) presented multimedia information systems for mountain hikers. *A. Neumann* (University of Vienna, Austria) and *M. Buchroithner/D. Teichmann* (Technical University of Dresden, Germany) reported about interactive cave information and visualization systems. *G. Gartner* (Technical University of Vienna, Austria) provoked an interesting discussion about quality aspects in high mountain cartography. *T. Patterson* (National Park Service, Harpers Ferry, USA) presented realistic 3D-visualizations of park areas created using Photoshop and Bryce3D software.

The workshop has shown that high mountain cartography again raises a broad interest. The spectrum of different subdomains has been extended from classical topographic cartography towards thematic applications. Also in this field, new media and technologies can be applied successfully. In the future, the importance of high mountain areas will increase globally. With its research, the Working Group on High Mountain Cartography hopes to provide a contribution towards a sustainable development and conservation of these landscapes. A second workshop at Alpinzentrum Rudolfshütte (Austria) in the year 2000 is already planned. A demand for transformation into a working group of the International Cartographic Association (ICA) is being prepared. Further steps will be discussed on a group meeting during the German Cartography Days in Dresden on June 1, 1998.

Last but not least, all participants would like to thank Dr. *Karel Kriz*, *Regina Schneider* and their student team of the Institute of Geography at the University of Vienna for their perfect organization. Besides the interesting technical programme, the excursion and the GPS-assisted ski-trip to the Wiesbadener cottage (2443 m) and to the Rauhkopf pass (3000 m) will be remembered. The results of the workshop will be published in the series "Wiener Schriften zur Geographie und Kartographie" in autumn 1998. Latest information from the working group can be found on the following homepage:

<http://www.geod.ethz.ch/karto/hgkarto/hochgeb.html>

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