

EDITORIAL

INTEGRATIVE MULTIDISCIPLINARY STUDIES IN GEOMORPHOLOGY, NEOTECTONICS AND QUATERNARY GEOLOGY

Even though, geological processes are slow in comparison to human life and historical time scales, it has been realized in the last decades that our "geological environment" is much more dynamic than often thought. This applies especially to the slow deforming regions in continental interiors, where, for example, frequent earthquakes are rarely observed. However, these regions are deforming with low deformation rates (0.1-1.0 mm/yr), leading to recurrence periods of major earthquakes, which are assumed to be longer than 1.000 to 10.000 years, giving the pertinent time windows for assessing the responsible processes.

On one hand, the landscape and its development stores valuable information on the active geological processes. On the other hand, the interpretation of only one kind of data is often ambiguous, making the integration of additional data necessary. Related earth sciences research recently has undergone a rapid evolution towards integration of different data sets and methods. Most approaches aim for the quantification of observations in order to allow deducing of controlling factors and dynamic processes. Several national and EC projects funded in Europe in the last decade outline the demand for integrative, process-oriented research.

In the years 2001-2004, the Department of Geology/Department of Geological Sciences of the University of Vienna participated in the European Community funded FP5 Network ENTEC [Environmental Tectonics]. The main objective of ENTEC was to realize a quantitative understanding of the interplay of active tectonics, surface and subsurface processes, and the evolution of intraplate continental lithosphere controlling seismic hazards in the foreland of the Alpine Orogen. The research strategy was mainly based on an integration of geological, geophysical, geodetic, geomorphological and technological approaches. 9 European research institutes participated in this network and led to an intense scientific exchange in meetings and collaborations. Several papers in this volume of the Austrian Journal of Earth Sciences result from ENTEC related work or have been stimulated in the scientific community in contact with this project. Additional papers have been added in order to highlight the range of methods currently used to assess geological landforms and processes of the younger geological history.

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(Guest editors)

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