

Introductory Foreword

In the frame of the FWF Translational Brainpower project **TEMPEL** (Geoelectric properties: temporal change as failure indicator - TRP 175-N21) and the 7th Framework Program European Project **SafeLand** (Living with landslide risk in Europe), the Austrian Geological Survey hosted the **“First International Workshop on Geoelectric Monitoring - GELMON 2011”** - in Vienna. The workshop was held at the Geological Survey of Austria from the 30th of November to the 2nd of December 2011.

Geoelectrical monitoring has significantly developed over the recent years as an emerging branch in applied geophysics. Several groups have achieved very selective knowledge in this field of geoelectrics. The intention of the GELMON workshop therefore was to bring the different groups together, to present results and to discuss the way forward. The scope of the workshop was not only focused on the presentation of state-of-the-art results but also on the discussion of special topics of data acquisition, processing, inversion and interpretation.

When the idea of the workshop was born, we were thinking of a small workshop with 20 to 30 participants. Presentations on all related aspects of geoelectrical monitoring were requested, covering the field from technical issues to the presentation of recent case study results. Specialists in the field of geoelectrics and related scientific disciplines were invited to submit their abstracts on diverse topics on geoelectric monitoring. After sending out the invitations we were overwhelmed by the quantity of interested people. Finally, almost 100 scientists from 18 countries registered for participation, whereas more than half of them were willing to contribute to the workshop by oral or poster presentation.

This unexpectedly huge number of participants highlights the importance of geoelectric monitoring all over the world and intensifies the need of cooperation and communication.

All important aspects of geoelectric monitoring, including monitoring of landslides, permafrost, CO₂, geothermal sites and contaminations, applications in hydrology and engineering, but also some contributions on instrumentation, data acquisition and data inversion were discussed during the workshop in Vienna. The discussions after the presentations highlighted the need of innovation and technological progress especially in the area of geoelectrical time-lapse/4D inversion and data quality assessment.

Finally it was decided to repeat this successful event in a two years cycle. The majority of participants voted again for Vienna as meeting venue. Therefore the 2nd Workshop on Geoelectrical Monitoring will take place in November 2013 again in Vienna and organised by the staff of the Geophysical Department of the Geological Survey of Austria.

This book contains the collection of extended abstracts summarizing the content of the talks held during this workshop and is intended to be a reference in geoelectric monitoring.

This is also the place to thank all the people from GSA who were involved in the organization of this workshop (especially Birgit Jochum, David Ottowitz, Stefanie Kauer and Anna Zöchbauer) for their enthusiastic help.

Robert Supper
Chairman of GELMON 2011
Vice President of the Austrian Geophysical Society

This book is dedicated to the memory of Erich Niesner,
31.01.1955 - 22.4.2012,



one of the pioneers of geoelectric monitoring in Austria,

and
to the memory of Knut Seidel,
21.01.1953 - 07.05.2012



geophysicist at GGL Geophysik und Geotechnik Leipzig GmbH.

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