Slope Tectonics 08

The meeting took place on **Friday, 15th February, 2008** and **Saturday, 16th February, 2008**.

Aim of the Congress

The purpose of the meeting is to look at how Slope Tectonics has progressed recently. Slope tectonics is dedicated to the analysis of structures induced and reactivated by slope movements.
A great number of data around the world now documents this domain, which has been updated thanks to hazard mapping at a local scale. New technologies, such as Lidar DEM, have made structural analysis easier.

Main topics for the congress are:

- Slope induced fabrics
- Mapping of conjugate fracturing in hard rock slopes
- Slope folds
- Soil gravitational structure fabrics
- Slope surface characterization
- Fault gauges induced by Slope movements
- Regional scale gravitational movement (up to mountain range collapse)
- Failure and pre-failure
- Deposit structuration
- Fabrics development modelling

photos: Michel Jaboyedoff, Thierry Oppikofer (Eiger), Braathen et al.

Organising Commitee

Advisory Commitee

- Dr. L.H. Blikra Geoscientific leader Åknes/Tafjord project, Stranda Norway
- Ch. Bonnard Independent expert, Lausanne, Switzerland
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- Prof. M. Chigira Kyoto University, Japan
- Dr. J. Coe U.S. Geological Survey, Denver, CO, USA
- Dr. R. Couture Geological Survey of Canada, Ottawa, Canada
- Prof. G.B. Crosta Università degli Studi di Milano Bicocca, Italy
- Dr. M.-H. Derron Geological Survey of Norway (NGU), Trondheim, Norway
- Prof. S.G. Evans University of Waterloo, Canada
- Dr. C.R. Froese Alberta Geological Survey, Edmonton, Canada
- Dr. I. Henderson Geological Survey of Norway (NGU), Trondheim, Norway
- Dr. V. Labiouse EPFL, Lausanne, Switzerland

- Prof. J. Locat Université Laval, Québec, Canada
- Dr. A. Saintot Geological Survey of Norway (NGU), Trondheim, Norway
- Prof. D. Stead Simon Fraser University, BC, Canada

Local Commitee

- Prof. M. Jaboyedoff IGAR - University of Lausanne
- Dr. J.-L. Epard IGP - University of Lausanne
- MSc. T. Oppikofer IGAR - University of Lausanne
- MSc. A. Pedrazzini IGAR - University of Lausanne
- MSc. P. Horton IGAR - University of Lausanne

Programm

Structures induced by slopes, Chairman: A. Saintot

Structures and deformational features recognized in deep-seated slope failures in the flysch belt of Outer Western Carpathians (Czech Republic)
Baron I., Krejci O, Novotny R.

Controls on structural style of rock-slope failures in Norway: a discussion
Alvar Braathen, Lars Harald Blikra, Guri Venvik Ganerødand Iain Hederson

Tectonic vs. gravitational morphostructures in Upper Valtellina (Central Alps, Italy)
G.B. Crosta, A. Zanchi, F. Agliardi, C. Ambrosi

Geomorphic, structural and paleostress analysis of a Quaternary giant slope failure near Boaco and Santa Lucia (Nicaragua, Central America)
Baron I., Novotny R., Kernstockova M. and Burianek D., Havlicek P., Hradecky P.Melichar R

Reactivation of ancient structures, Chairman: Ch. Bonnard

Large-scale mass movements in upper Vizze valley (Alto Adige, Italy)
M. Massironi, R. Genevois, A. Bistacchi, M. Floris, G.Dal Piaz

Rock avalanches related to the congruency between slope terrains and geological structural features. The landslides of the Sierra Norte de Puebla (Mexico).
Veronica Ochoa-Tejeda and Jean-François Parrot

The role of pre-existing ductile and brittle fabrics in the development of large rockslides: examples from Western Norway.
A. Saintot & I. Henderson

Tectonic controls on large deep seated slope deformations and their interaction with man-made structures: the Cima di Mandriole sackung (Central Italian Alps)
F. Agliardi, C. Ambrosi, G.B. Crosta, A. Zanchi, S. Cocco

Reactivation of ancient structures and Modeling, Chairman: D. Stead

Characterization of brittle discontinuities in crystalline rocks applied to slope failure analysis in the Matter valley, Switzerland.
Freddy Yugsi, Frank Lemy, Andrew Kos, Simon Loew

Influence of tectonically inherited fractures on rockslide: new insights from a 3-D physical and numerical modeling of the 1991 Randa rockslides (Valais, Switzerland).
T. Bois & S. Bouissou.

The use of remote sensing techniques in the engineering characterization of high mountain rock slopes.
Matthieu Sturzenegger, Ming Yan and Doug Stead

Morphological and geological controls on deformation mechanisms of rock slopes
Crosta, G.B., Ambrosi, C.

Differentiation of preexisting and slope-induced structures in Frank slide scar
Pedrazzini A. , Jaboyedoff M. , Langenberg W. , Moreno F. , Froese C.

Case studies and regional mapping, Chairman: G.B. Crosta

The Celentino landslide: a geomechanical approach and numerical modelling.
R. Genevois, S. Martin , M. Ghirotti , M. Floris and S. Cocco

Influence of internal and external factors controlling long-term damage and failure of rock slopes, insights from a regional morphological study.
Jomard H., Guglielmi Y. & Lebourg, T.

Rockslide investigations in Sogn & Fjordane, Norway
Böhme, M., Henderson I., Saintot A.

The dynamics of active landslide development and evolution: a combined structural geology, geomorphology and InSAR approach.
Henderson, I.H.C. Lauknes, T.R., Osmundsen, P.T., Redfield, T. & Larsen, Y.

A semi-quantitative approach to structural geology in landslide research: a regional study from Storfjorden in western Norway
Iain Henderson & Aline Saintot

Case studies and regional mapping, Chairman: M.-H. Derron

Fan-like deposits from catastrophic mountain collapse: possible reinterpretation of the exceptional fans of Upper Venosta valley (Italian Alps)
David Jarman , Federico Agliardi , Giovanni B. Crosta , Andrea Zanchi

A multidisciplinary approach for the characterization and hazard evaluation of large slope instabilities: the Clot Brun case study (Susa Valley, Western Italian Alps)
Nervo, B., Giardino, M., Fontan, D, Stringa, I., Ambrogio, S., Fratianni, S.

Occurrence of rock-block slides on black marl gully hillslopes: an interactive slope stability, seepage and stress analysis.
Malet, J.-P., Thierry, Y., Travelletti, J.

Geological and structural interpretation of Åknes Landslide and recent failures
Jaboyedoff M., Böhme M., Blikra L., Derron M., Henderson I., Oppikofer T., Saintot A.

Slope movements induced by active tectonics, Chairman: T. Redfield

Tectonics of slopes with large block landslides on the border of Bohemian Massif
Krejci Oldrich, Baron Ivo, Hubatka Frantisek, Kasperakova Dagmar and Daniel Nyvlt

Relationship between tectonic uplift, induced slope deformation and rock avalanche events in the Maiella Massif (central Apennines, Italy)
Bianchi-Fasani G., Cavinato G.P., Di Luzio E., Esposito C., Scarascia Mugnozza G.

Distribution of landslides linked with indices of relative active tectonics along south flank of

the Sierra Nevada (Granada, Spain).
El Hamdouni, R., Irigaray, C., Chacón, J ., and Keller, E.A.

Relationship between alpine tectonic and slope instability in the Argentera massif (South-western Alps).
Sanchez Guillaume, Rolland Yann & Corsini Michel

Structure and morphology of slide complexes in an active margin setting: the example of the emerged accretionary prism, North Island, New Zealand.
Aurélien Lacoste, Lies Loncke, Bruno Vendeville, Frank Chanier, Julien Bailleul and Geoffroy Mahieux

Deep-seated Gravitational Slope Deformation in Emergent Soft Rock Terrain, Hikurangi Subduction Margin, Hawke's Bay, New Zealand
Kerry Leith

Slope movements induced by active tectonics, Chairman: J.-P. Malet

Tectonic controls on topography and rockslide distribution in Troms county, Norway
Osmundsen, P.T., Henderson, I., Lauknes, T. R. , Redfield, T.F, Larsen, Y.& Dehls, J.

The Langfjorden Shear Zone: a normal brittle fault linking post-Caledonian normal faulting with the Tjelle tsunami of 1756
T. F. Redfield & P. T. Osmundsen

Is the spatial distribution of rockslides in Western Norway controlled by post-glacial tectonics?
Aline Saintot & Iain Henderson

Quantification of progressive failure of a rock slope over a 10 kyears period: results from the "La Clapière" slope (French south Alps, France).
El Bedoui S., Lebourg T., Gugliemi Y. & Pérez J.L.

Causes and consequences of large slope failures along the Middle Aosta Valley, NW Italy
Giardino, M., Ratto, S., Martinotti, G.