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# COGEAR

## Presentations

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### During Fourth Project Year

Burjánek, J., Gassner-Stamm, G., Poggi, V., Fäh, D. (2011). Estimation of local site effects in the Upper Valais (Switzerland), 4th IASPEI / IAEE International Symposium: Effects of Surface Geology on Seismic Motion, Santa Barbara, United States.

Burjánek, J., Moore, J.R., Gassner-Stamm, G., Fäh, D. (2011). Seismic response of unstable mountain rock slopes: Topographic site effect?, 4th IASPEI / IAEE International Symposium: Effects of Surface Geology on Seismic Motion, Santa Barbara, United States.

Moore, J.R., Burjanek, J., Gischtig, V., Loew, S., and Faeh, D. (2011). Seismic amplification in unstable rock slopes and the role of compliant fractures, EOS Trans. AGU, 92(52), Fall Meet. Suppl., NH31B-1536.

Geiger, A., A. Villiger, and D. Faeh (2011), COGEAR Coupled seismogenic Geohazards in Alpine Regions (COGEAR), in Swiss National Report on the geodetic activities in the years 2007 to 2011, edited by J. Mueller-Gantenbein, A. Wiget, U. Marti, M. Rothacher, and P.-Y. Gilliéron, Swiss Geodetic Commission, isbn: 978-3-904880-26-0.

Geiger, A., A. Villiger, Ph. Limpach, M. Rothacher, S. Häberling, A. Kretz, M. Müller (2012): Verschiebt es oder verschiebt es nicht?, Kolloquium Swiss4D, swisstopo, Bern, 20.01.2012

Gischtig, V., Moore, J.R., Evans, K.F., Amann, F., and Loew, S. (2011). Thermo-mechanical forcing of deformation and progressive failure in large rock slope instabilities, EOS Trans. AGU, 92(52), Fall Meet. Suppl., NH11B-06.

Gischtig, V., Moore, J.R., Evans, K.F., Amann, F., and Loew, S. (2011). Thermo-mechanical forcing of seasonal rock slope deformation at Randa (Switzerland), Geophysical Research Abstracts, 13, EGU2011-2546.

Glüer, F., Loew, S. (2011) Kinematic Analyses of Rock Slope Failures Triggered by the Aysén 2007 Earthquake (Patagonia, Chile), Geophysical Research Abstracts, 14, EGU2012-1642  
Moore, J.R., Burjanek, J., Gischtig, V., Loew, S., and Faeh, D. (2011). Response of the Randa rock slope instability to small regional earthquakes, Geophysical Research Abstracts, 13, EGU2011-11103.

Häberling, S., M. Rothacher, and Y. Zhang (2011a), Assessment of shake table generated earthquake ground motions recorded using high-rate GNSS, in XXV General Assembly of the International Union of Geodesy and Geophysics (IUGG) , 5634, Melbourne, Australia.

Häberling, S., Y. Zhang, M. Rothacher, A. Geiger, and J. F. Clinton (2011b), Using a 1D shake table to evaluate the potential contribution of high-rate GPS to seismology, in Fall Meeting of the American Geophysical Union (AGU) , G33C-01, San Francisco, California.

Li, C., Dupray, F., Seiphoori, A. and Laloui, L., 2012. Nonlinear behaviour of landslides under a dynamic loading condition: The Grächen case. Fourth annual meeting of COGEAR, Visp, January 25-27 2012.

Li, C., Dupray, F. and Laloui, L., 2012. Study on the possible seismically triggered landslides in Valais. Fourth annual meeting of COGEAR, Visp, January 25-27 2012.

Limpach, Ph., A. Kretz, A. Villiger, A. Geiger (2012): Verdichtung des AGNES-Netzes im Wallis - Überwachung von Rutschgebieten mit low-cost GPS Sensoren. Kolloquium Swiss4D, swisstopo, Bern, 20.01.2012

Pedrazzini, A., Leith, K., Sarrasin, N., Moore, J.R., and Jaboyedoff, M. (2011). Analysis of predisposing factors and slope activity of rockfall prone areas based on terrestrial laser scanner and time laps photography, *Geophysical Research Abstracts*, 13, EGU2011-12979.

Rothacher, M. (2011a), The Challenge in Earth Observation: from the reliable detection of very small trends to the fast response to catastrophic events, in XXV General Assembly of the International Union of Geodesy and Geophysics (IUGG), Union Lecture , Melbourne, Australia.

Rothacher, M. (2011b), Global Navigation Satellite Systems (GNSS): Earth Monitoring and Early Warning Sys-tems, in Earth Observation of Global Changes (EOGC) 2011 , Munich, Germany.

Villiger, A., A. Geiger, A. Wiget, and U. Marti (2011), SWISS-4D II: Geodetic analysis of geodynamic deformations in Switzerland, in Swiss National Report on the geodetic activities in the years 2007 to 2011, edited by J. Mueller-Gantenbein, A. Widet, U. Marti, M. Rothacher, and P.-Y. Gil-leron, Swiss Geodetic Commission, isbn: 978-3-904880-26-0.

Villiger, A., A. Geiger, U. Marti and E. Brockmann (2011), SWISS 4D: Estimation of the tectonic deformation field of Switzerland based on GPS measurements, Abstract Volume 9th Swiss Geo-science Meeting, Zurich, 11th – 13th November 2011

Villiger, A., Geiger, A. and Limpach, Ph. (2012), Wie verformt sich die Schweiz?, Kolloquium Swiss4D, swisstopo, Bern, 20.01.2012

Villiger, A., U. Marti, E. Brockmann, and A. Geiger (2011b), SWISS 4D. Determination and mod-eling of the tec-tonic deformation field of Switzerland. in XXV International Union of Geodesy and Geophysics (IUGG) General Assembly, Melbourne, Australia.

Zhang, Y., S. G. Song, L. A. Dalguer, J. F. Clinton, and S. Häberling (2011a), Investigating the reliability of kinematic source inversion with dynamic rupture models and potential use of high-rate GNSS data, in Fall Meeting of the American Geophysical Union (AGU) , San Francisco, Cali-fornia.

Zhang, Y., S. G. Song, L. A. Dalguer, J. F. Clinton, and S. Häberling (2011b), Investigating the reliability of kinematic source inversion with dynamic rupture models and potential use of high-rate GNSS data, in 9th Swiss Geoscience Meeting (SGM), Zurich, Switzerland.

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## During Third Project Year

Burjanek, J., 2011. Development of 3D velocity model for Visp area. Third annual meeting of COGEAR, Visp, January 26-28 2011.

Burjanek, J., 2011. Ambient vibration observations on unstable rockslopes. Third annual meeting of COGEAR, Visp, January 26-28 2011.

Burjanek, J., 2011. Status of module 3c (Snow avalanche triggering). Third annual meeting of COGEAR, Visp, January 26-28 2011.

Burjanek, J., Gassner-Stamm, G., and Fäh, D., 2010. Evaluation of local site effects in the Upper Valais (Swit-zerland), oral presentation at ESC 32nd General Assembly in Montpellier, France.

Burjanek, J., Gassner-Stamm, G., and Fäh, D., 2010. Ambient vibration analysis of unstable mountain slopes, oral presentation at ESC 32nd General Assembly in Montpellier, France.

Dalguer, Luis A.; Benjamin Edwards; Falko Bethmann; Jan Burjanek; Cyrill Ba mann; Villiger Ar-turo; Marschall Iris; Donat Fäh; Nicholas Deichmann; Alain Geiger (2010) Seismological research in the Valais for the assessment of future earthquakes. CCES Latsis Symposium 2010

Dalguer L. A. (2010), Pulse-like rupture in large aspect-ratio faults, 1st QUEST Workshoop, 19-26 September 2010, Sardinia, Italy.

Dalguer, L.A and J.-P. Ampuero (2010), Rupture Arresting in Large Aspect-ratio Faults ( $L \gg W$ ), 7th ACES International Workshop, Otaru, Japan, October 3-8.

Dammeier, F., Moore, J.R., Haslinger, F., and Loew, S., 2010. Seismic Signal Analysis of Rockslide Events in the Swiss Alps, Proceedings Swiss Geoscience Meeting, Fribourg.

Dammeier, F., Moore, J.R., Haslinger, F., and Loew, S., 2010. The seismic signature of rockslides: a review of events in the Central Alps, EOS Trans. AGU, 91(52), Fall Meet. Suppl., NH32A-07.

Dupray, F., Li, C., Ferrari, A. and Laloui, L., 2011. Dynamic effects on inclined soil layers. Third annual meeting of COGEAR, Visp, January 26-28 2011.

Fäh, D., Burjanek, J., and COGEAR working group, 2010. Coupled Seismogenic Geohazards in Alpine Regions (COGEAR), oral presentation (invited) at Forum Alpinum '10, Munich, Germany.

Fäh, D., V. Poggi, J. Burjanek, S. Marano, J. Revilla, C. Michel, 2010. The potential of ambient vibration measurements: Examples of applications in Switzerland, oral presentation (invited) at ESC 32nd General Assembly in Montpellier, France.

Fritsche, S., M. Gisler, G. Schwarz-Zanetti, D. Fäh, 2010. Historical Earthquakes in the Valais: Primary and Secondary Effects, poster presentation at ESC 32nd General Assembly in Montpellier, France.

Geiger, A., A. Villiger, Ph. Limpach, 2011. Status of module 2b: Geodetic measurements and kinematic modeling. Third annual meeting of COGEAR, Visp, January 26-28 2011.

Gisler, M., S. Fritsche, D. Fäh, 2010. Earthquake Communication in Eighteenth Century Switzerland, oral presentation at ESC 32nd General Assembly in Montpellier, France.

Laue, J. 2011: Design of Geotechnical Measurements at the borehole site. Third annual meeting of COGEAR, Visp, January 26-28 2011.

Laue, J. 2011: Status of Module 3a. Third annual meeting of COGEAR, Visp, January 26-28 2011.

Marano, S., D. Faeh, C. Reller, H. Loeliger, 2010. Seismic wavefield decomposition: application to the analysis of ambient vibrations, oral presentation at ESC 32nd General Assembly in Montpellier, France.

Marin, A. 2011: First observations on alluvial deposits from Visp towards non linear soil behavior. Third annual meeting of COGEAR, Visp, January 26-28 2011.

Michel, C., Status of the Strong Motion Network in the COGEAR target-area and Site characterization effort, Third annual meeting of COGEAR, Visp, January 26-28 2011.

Moore, J.R., Burjanek, J., Gischig, V., Loew, S., and Faeh, D., 2010. Investigating the Seismic Response of a Large Rock Slope Instability (Randa, VS), EOS Trans. AGU, 91(52), Fall Meet. Suppl., NH11A-1105.

Moore, J.R., Burjanek, J., Gischig, V., Loew, S., and Faeh, D., 2010. Investigating the Seismic Response of a Large Rock Slope Instability (Randa, VS), Proceedings Swiss Geoscience Meeting, Fribourg.

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## **During Second Project Year**

Akdeniz, F. and J. Laue, 2009. Data and Database at IGT. COGEAR Workshop, July 1, 2009, EPFL Lausanne.

Akdeniz, F. and J. Laue, 2009. Borehole instrumentation in soils at Visp. COGEAR Workshop, July 1, 2009, EPFL Lausanne.

Alvarez-Rubio, S and D. Fäh, 2010. Magnetotelluric and geochemical Sensors - Status and plans. Second annual meeting of COGEAR, Visp, January 27-29 2010.

Balderer, W., 2010. Continuous monitoring of natural fluorescence of water at dedicated wavelengths: Overview and first results at Brigerbad site. Second annual meeting of COGEAR, Visp, January 27-29 2010.

- Burjanek, J., 2010. Measurement campaigns in the Visp – Matter valley area. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Burjanek, J., 2010. Ambient vibration analysis of unstable mountain slopes in Matter valley. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Burjanek, J., 2010. Status of module 3c. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Button, E., Moore, J. and S. Löw, 2009. Data and Database at EngGeo. COGEAR Workshop, July 1, 2009, EPFL Lausanne.
- Button, E., 2010. Status of module 3b: Looking Back and Planning Ahead. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Button, E., 2010. Geotechnical Reconnaissance after the L'Aquila Earthquake. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Clinton, J., 2009. Seismic instrumentation in upper Valley. COGEAR Workshop, July 1, 2009, EPFL Lausanne.
- Clinton, J., 2010. Status of seismic station installations and ideas for use of co-located High Rate GPS stations. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Dalguer, L., 2009. Data and Database at SEG. COGEAR Workshop, July 1, 2009, EPFL Lausanne.
- Dalguer, L., 2010. Status of module 2. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Dalguer, L., 2010. Near-source Ground Motion Modeling Based on Dynamic Rupture Approach for Seismic Hazard Assessment. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Edwards, B., 2010. Regional variability of earthquake induced ground motion in Switzerland. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Eisenbeiss, H. Baltsavias, M., 2009. Data and Database at PRS. COGEAR Workshop, July 1, 2009, EPFL Lausanne.
- Fäh, D., 2009. Status of project COGEAR. COGEAR Workshop, July 1, 2009, EPFL Lausanne.
- Fäh, D., 2009. Magneto-telluric and geochemical sensors. COGEAR Workshop, July 1, 2009, EPFL Lausanne.
- Fäh, D., 2010. Status of COGEAR – Important dates in 2010. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Ferrari, A. and L. Laloui, 2009. Data and Database at LMS. COGEAR Workshop, July 1, 2009, EPFL Lausanne.
- Ferrari, A. and L. Laloui, 2010. Ongoing activities at the LMS for dynamic analysis of geomaterials. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Fritsche, S. and D. Fäh, 2010. Primary and secondary effects of large historic earthquakes in the Valais region. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Gischig, V., 2010. Insights into rock slope kinematics at the Randa instability based on new remote sensing data and numerical models. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Gischig, V., Loew, S., Kos, A., Raetzo, H., 2009. Large scale rock slope release planes imaged by differential ground based InSAR at Randa, Switzerland, Geophysical Research Abstracts, 11, EGU2009-2088.
- Häberling, S., 2010. High rate GNSS sensors and their seismological applications. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Kästli, P., 2009. Data and Database at SED. COGEAR Workshop, July 1, 2009, EPFL Lausanne.

- Laue, J. and D. Fäh, 2010. Status of module 3a. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Leith, K., 2010. Geomorphic identification of sensitive rock slopes. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Leith, K., Kos, A., Loew, S., Moore, J.R., 2009. Valley Evolution and Controls on Present-Day Rock Slope Proc-esses in the Matter and Saas Valleys, Switzerland, Geophysical Research Abstracts, 11, EGU2009-13060-2.
- Marano, S., 2010. Seismic wavefield decomposition using factor graphs. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Marin, A., 2010. Influencing parameter and open questions on non linear soil behaviour in fluvial deposits. Sec-ond annual meeting of COGEAR, Visp, January 27-29 2010.
- Marschall, I., 2010. An overview of the seismicity in Valais and Graubünden. Second annual meet-ing of COGEAR, Visp, January 27-29 2010.
- Michel,C., Lestuzzi, P., 2009. Data and Database at IMAC. COGEAR Workshop, July 1, 2009, EPFL Lausanne.
- Michel, C., 2010. Seismic vulnerability curves for buildings in Visp and Switzerland in general. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Michel, C., 2010. Accelerometric network in the COGEAR project area: state and development plan. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Moore, J., 2009. Borehole and Surface Fiber Optic Strain Sensors at Randa. COGEAR Workshop, July 1, 2009, EPFL Lausanne.
- Moore, J.R., Gischig, V., Button, E., and Loew, S., 2009. Dynamic Landslide Deformation Monitoring with Fiber Bragg Grating Sensors, EOS Trans. AGU, 90(52), Fall Meet. Suppl., NH43B-1314.
- Moore, J., 2010. Dynamic Strain Measurements at the Randa Test Site. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Poggi, V., 2010. The use of Rayleigh wave ellipticity for seismic response modelling of sedimentary basins: ap-plication to the town of Visp, Switzerland. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Revilla, J. and S. Marano, 2009. Wireless, self-locating seismic networks. COGEAR Workshop, July 1, 2009, EPFL Lausanne.
- Sauerbier, M., 2010. Integration of the photogrammetric data into the COGEAR database. Second annual meet-ing of COGEAR, Visp, January 27-29 2010
- Schnabel, O. and L. Hurni, 2009. Data and Database in COGEAR. COGEAR Workshop, July 1, 2009, EPFL Lausanne.
- Schnabel, O. and L. Hurni, 2009. Instrument-Data in COGEAR - integration in SwissExperiment. COGEAR Workshop, July 1, 2009, EPFL Lausanne
- Schnabel, O., 2010. State of the COGEAR database. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Schnabel, O., 2010. Data Exchange between COGEAR and Swiss Experiment. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Spada, M., 2010. Toward a new seismic hazard model for Switzerland: characterization of syn-thetic seismicity distributions with spatially fractal properties. Second annual meeting of COGEAR, Visp, January 27-29 2010.
- Villiger, A. and A. Geiger. 2009. Data and Database at GGL. COGEAR Workshop, July 1, 2009, EPFL Lausanne.

Villiger, A. and A. Geiger. 2009. GPS sensors, data, cooperation with Swisstopo. COGEAR Workshop, July 1, 2009, EPFL Lausanne.

Villiger, A., 2010. GNSS instrumentation state and first results from project SWISS 4D II. Second annual meet-ing of COGEAR, Visp, January 27-29 2010.

Wagner, M., 2010. Development of combined controlled source seismology and local earthquake tomography; three dimensional P-wave model of the lithosphere in the greater Alpine region. Second annual meeting of COGEAR, Visp, January 27-29 2010.

Yugsi Molina, F.X., Loew, S., Button, E., 2009. The use of DEM analysis for structural characterization of land-slide-prone areas in crystalline rock slopes using GIS-based techniques. The case of the Matter Valley, Switzerland, Geophysical Research Abstracts, 11, EGU2009-8410.