HOT and COLD extreme climates in space and time
Welcome to Fribourg and to the 8th Swiss Geoscience Meeting 2010

Dear Participants

First and foremost we cordially welcome you to Fribourg, to the University and to its Geoscience Department. Thank you for joining us at the 8th Swiss Geoscience Meeting. The SGM is organised by our Department under the auspices of the Swiss Academy of Sciences. Since its beginning in 2003, it was a success story, with an ever growing number of participants. We are expecting close to 600 persons at this year's meeting and over 300 abstracts have been submitted. We would like to acknowledge the efforts of the session organizers, which resulted in a very attractive meeting program.

The topic for the general session on Friday reflects very well the different research activities in our Department: from palaeoecology of the Jurassic and Cretaceous tropical seas to the evolution of glaciers and permafrost today and the recent past: in other words, some of us like it “HOT” and others prefer it “COLD”. Hot and cold are adjectives that are very much stressed these days. They are at the core of one of the most daunting problems our society is facing: global warming. Many if not all natural processes and anthropogenic activities are very sensitive to temperature changes. Polar bears have more and more troubles to hunt because of the melting arctic ice and ICE (!) trains come to a halt because the air conditioning (!) could not keep up with the torrent heat in July this year. Beyond the debate of who or what is the culprit for the increase in temperature, our society has to prepare itself to adapt to the changing conditions. Which conditions? This is where we Geoscientists bring ourselves in: we have entire libraries of past climatic conditions and evolutions in our hands, from the coldest to the hottest. Such extreme climates are the topic of Friday’s afternoon general session, from “Snowball Earth”, one of the coldest chapters of Earth history, to the hot conditions of “Greenhouse Earth” at the Paleocene-Eocene boundary. Among Saturday’s general sessions, I would like to pick out the session organized in honour of the 100th birthday of Prof. Augusto Gansser, who opened up to us Geoscientists one of the most fascinating libraries of our Earth’s history: the Himalayas. Happy birthday to you!

We hope that the meeting will offer a fruitful platform for discussion and exchange. We will make every effort to ensure that you have a pleasant stay in Fribourg.

On behalf of the organizing committee,

Bernard Grobéty
Host Institution
Department of Geosciences of the University of Fribourg

Patronage
Platform Geosciences of the Swiss Academy of Sciences, SCNAT

Participating societies and organisations

Etablissement cantonal d'assurance des bâtiments, Fribourg (ECAB)
Federal Office of Meteorology and Climatology (MeteoSwiss)
Federal Office of Topography (swisstopo)
Institute of Geology and Hydrogeology (Chyn)
International Union of Geodesy and Geophysics, Swiss Committee (IUGG)
International Geographical Union (IGU)
International Union of Geological Sciences, Swiss Committee (IUGS)
Kommission der Schweizerischen Paläontologischen Abhandlungen (KSPA)
Mars Society Switzerland
Oeschger Centre for Climate Change Research (Uni Bern)
Service des constructions et de l'aménagement du canton de Fribourg (SeCa)
Swiss Academic Society for Environmental Research and Ecology (SAGUF)
Swiss Association of Geologists (CHGEOL)
Swiss Commission for Remote Sensing (SCRS)
Swiss Committee for Stratigraphy
Swiss Geodetic Commission (SGC)
Swiss Geography Association (SGV-ASG)
Swiss Geological Society (SGG/SGS)
Swiss Geological Survey (swisstopo)
Swiss Geomorphological Society (SGGm/SSGm)
Swiss Geophysical Commission (SGPK)
Swiss Geotechnical Commission (SGTK)
Swiss Hydrogeological Society (SGH)
Swiss Hydrological Commission (CHy)
Swiss Meteorological Society (SGM)
Swiss Palaeontological Society (SPG/SPS)
Swiss Snow, Ice and Permafrost Society (SIP)
Swiss Society for Hydrology and Limnology (SGHL / SSHL)
Swiss Society for Quaternary Research (CH-QUAT)
Swiss Society of Mineralogy Petrography (SMPG / SSMP)
Swiss Soil Science Society (SSSS)
Swiss Tectonics Studies Group (Swiss Geological Society)
Swiss Working Group on Geotopes (Platform Geosciences)

For the schedules of committee and society meetings see page 36
Program committee SGM 2010

Gilles Borel
Lionel Cavin
Pierre Dèzes
Hans-Rudolf Egli
Charles Fierz
Karl Föllmi
Alain Geiger
Bernard Grobéty
Martin Hoelzle
Hans Hurni
Adrian Jakob
Ronald Kozel
Neil Mancktelow
Franziska Nyffenegger
Nils Oesterling
Adrian Pfiffner
Rolf Philipona
Frank Preusser
Eric Reusser
Bruno Schädler
Manfred Thüring
Helmut Weisert
Adrian Wiget
François Zwahlen

Local committee

Bernard Grobéty (President SGM 2010)
Jean-Pierre Berger
Reynald Delaloye
Olivier Graefe
Christian Hauck
Martin Hoelzle
Jon Mosar
Silvia Spezzaferri
André Strasser

Exhibitors

BeFri Master
CHGEOL
Eijkelkamp Agrisearch Equipments
ESRI Suisse
Madd Technologies
SCNAT Platform Geosciences
Swiss Geotechnical Commission
Swisstopo
Tetraèdre
Location

Auditorium Joseph Deiss: registration, plenary session

Pérolles 2 building: symposium sessions, exhibitions

walk from train station 15 minutes along Boulevard de Pérolles, or take buses 1 or 7 to Pérolles

Abstracts can be downloaded at:
http://www.geoscience-meeting.scnatweb.ch/sgm2010/
Plenary session, Friday, November 19th

Hot and Cold: Extreme climates in space and time

Pérolles 2, Auditorium Joseph Deiss

13:30 - 13:50 Bernard Grobéty
Opening of the session by the president of the Department of Geosciences of the University of Fribourg

13:50 - 14:30 Paul F. Hoffman
Harvard University
The snowball Earth hypothesis and its recent progress (Joint SNC-IUGS & SNC-IUGG Union Lecture)

14:30 - 15:10 James Zachos
University of California
Global warming and ocean acidification 55 million years ago: lessons for the future?

15:10 - 15:20 Musical interlude: Swiss Ice Fiddlers

15:20 - 16:00 Hubertus Fischer
University of Bern
Climate studies on ice cores - tepid, warm and piping hot

16:00–16:20 Coffee break

16:20 - 17:00 John M. Reynolds
Reynolds International Ltd
Assessing and managing glacial hazards in a changing climate

17:00 - 17:05 Musical interlude: Swiss Ice Fiddlers

17:05 - 17:15 Guido Vergauwen
Address by the rector of the University of Fribourg

17:15 - 17:30 Pierre Ecoffey
Etablissement cantonal d'assurance des bâtiments
Impact of global change on the insurance business

17:30 - 18:15 Helmut Weissert
Helmut Weissert
Gilles Borel
Daniele Biaggi
Michael Dungan
Communications Platform Geosciences
Presentation SGM 2011 in Zurich
Swiss Geological Society Award
CHGEOL Award
Paul Niggli Medal

18:15 - ??? Swiss Geoscience Party - food, drinks, and rejoicing
| 1 | Structural geology, tectonics and geodynamics | talks | posters | talks |  | talks | posters | talks | A120 |
|---|-----------------------------------------------|-------|---------|-------|---|-------|---------|-------|-------|------|
| 2 | Mineralogy - petrology - geochemistry         |       |         |       |   |       |         |       |       | G140 |
| 3 | Himalayan geology: a tribute to Augusto Gansser |       |         |       |   |       |         |       |       | A140 |
| 4 | Palaeontology and palaeobiodiversity          |       |         |       |   |       |         |       |       | C230 |
| 5 | Lithostratigraphic units for the Swiss geological maps |       |         |       |   |       |         |       |       | B130 |
| 6 | Natural hazards and risks in Alpine geology   |       |         |       |   |       |         |       |       | A140 |
| 7 | Geomorphology                                 |       |         |       |   |       |         |       | SSGm  | C120 |
| 8 | Quaternary research                           |       |         |       |   |       |         |       |       | C140 |
| 9 | Trusting on soils in a changing world?        |       |         |       |   |       |         |       | RUGS  | C130 |
| 10| Cryosphere                                    |       |         |       |   |       |         |       |       | E120 |
| 11| Meteorology and climatology                   |       |         |       |   |       |         | SGM   |       | E140 |
| 12| Phenology and seasonality                     |       |         |       |   |       |         |       |       | E130 |
| 13| Geoscience and geoinformation                 |       |         |       |   |       |         | Erlebnis Geol. | | D130 |
| 14| Decision oriented modelling                   |       |         |       |   |       |         |       |       | E230 |
| 15| Hydrological and limnological perspectives    |       |         |       |   |       |         | SSHL  |       | G120 |
| 16| Groundwater and climate change                |       |         |       |   |       |         |       |       | F130 |
| 17| Troubling water: modes of socialization of a natural resource | |       |       |   |       |         |       |       | D230 |
| 18| The global / local in our research            |       |         |       |   |       |         |       |       | F130 |
| 19| Geotopes and geoparks                         |       |         |       |   |       |         |       |       | C120 |
| 20| Mars: water, climate and geology              |       |         |       |   |       |         |       |       | B130 |
Lecture halls Pérolles 2
**Session 1: Structural geology, tectonics and geodynamics**

**Room A120**

**Convenors:** Neil Mancktelow, Guido Schreurs, Paul Tackley

**Chair:** Adrian Pfiffner

**8:30-8:45** Ibele T., Matzenauer E., Mosar J.  
Northern Alpine foreland deformation in western Switzerland: New insights from field and seismic data of the Plateau Molasse

**8:45-9:00** Mosar J., Meier B., Sommaruga A., Abednego M., Eichenberger U., Ibele T., Matzenauer E., Sprecher Ch., Vouillamoz N.  
The Fribourg structure and Fribourg zone: an active fault system or the Rösti Graben - geologic evidence!

**9:00-9:15** Matzenauer E., Mosar J.  
Thrusting and faulting in the Préalpes Médianes

**9:15-9:30** Cardello G.L., Mancktelow N.  
Neogene oblique normal faults and veins in the Rawil Depression (SW Switzerland)

**9:30-9:45** Egli D., Mancktelow N.  
Neogene tectonics of the Mont Blanc area

**9:45-10:00** Norton K.P., Schlunegger F.  
Glacially enhanced fluvial erosion and rock uplift in the Swiss Alps

**10:00-11:00** Morning poster session with coffee

**Chair:** Neil Mancktelow

**11:00-11:15** Galster F., Eppard J.-L., Masson H.  
The Soja and Luzzone nappes : discovery of a Briançonnais element below the front of the Adula (NE Ticino, Central Alps)

**11:15-11:30** Scheiber T., Pfiffner O.A., Schreurs G.  
Strain accumulation during basal accretion – case study Suretta nappe (eastern Switzerland)

**11:30-11:45** von Niederhausern B., Manzotti P., Engi M., Rubatto D., Zucali M., Darling J.  
Evidence of Permian HT metamorphism in Austroalpine units of the Internal Western Alps?

**11:45-12:00** Kounov A., Schmid S.M.  
Fission-track constraints on the thermostectonic evolution of the Apuseni Mountains (Romania)

**12:00-13:30** Lunch

**Chair:** Paul Tackley

**13:30-13:45** Gonzalez L., Pfiffner O.A.  
Morphologic evolution of the Central Andes of Peru

**13:45-14:00** Bussien D., Gombojav N., Winkler W., von Quadt A.  
Preliminary geodynamic reconstruction of the Late Paleozoic-Jurassic Mongol-Okhotsk Belt in NE Mongolia

**14:00-14:15** Kaus B.J.P., Yamato P., Mouthereau F., Castelltort S.  
Dynamic constraints on crustal-scale rheology from the Zagros Mountains

**14:15-14:30** Frehner M., Exner U., Mancktelow N., Grujic D.  
The not-so-simple effects of boundary conditions on models of simple shear

**14:30-14:45** Vogt K., Gerya T., Castro A.  
Dynamics of crustal growth at active continental margins: numerical modeling

**14:45-15:00** Ruh J.B., Kaus B.J.P., Burg J.-P.  
Accretionary wedge dynamics: A numerical approach
### 15:00-16:00 Afternoon poster session with coffee

*Chair: Taras Gerya*

<table>
<thead>
<tr>
<th>Time</th>
<th>Presenter(s)</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>16:00-16:15</td>
<td>Keller T., Kaus B.J.P.</td>
<td>Numerical modeling of two-phase flow: Interaction of magmatism with active tectonics</td>
</tr>
<tr>
<td>16:15-16:30</td>
<td>Thielmann M., Kaus B.J.P.</td>
<td>Shear heating and subduction initiation</td>
</tr>
<tr>
<td>16:30-16:45</td>
<td>Bruijn R.H.C., Mainprice D., Burlini L.</td>
<td>High temperature compaction of hot-pressed Rochester shale powder</td>
</tr>
<tr>
<td>16:45-17:00</td>
<td>Tisato N., Madonna C., Boutareaud S., Burg J.-P.</td>
<td>A new instrumentation to measure seismic waves attenuation</td>
</tr>
</tbody>
</table>

### Posters of session 1 between A120 and A140

<table>
<thead>
<tr>
<th>Number</th>
<th>Poster Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Spontaneous initiation of subduction at passive margins – 3D modelling</td>
<td>Armann M., Gerya T.</td>
</tr>
<tr>
<td>1.1</td>
<td>Physical controls of intra-oceanic arc extension and trench migration</td>
<td>Baitsch Ghirardello B., Gerya T.</td>
</tr>
<tr>
<td>1.2</td>
<td>Orogenic development of the Northeastern Andes (Colombia) as revealed</td>
<td>Beltrán-Triviño A., Winkler W., von Quadt A.</td>
</tr>
<tr>
<td></td>
<td>by detrital zircons -preliminary results</td>
<td>Beltrán-Triviño A., Winkler W., von Quadt A.</td>
</tr>
<tr>
<td>1.3</td>
<td>Geodynamics of the Alpine Tethys as traced by detrital zircons</td>
<td>Beltrán-Triviño A., Winkler W., von Quadt A.</td>
</tr>
<tr>
<td></td>
<td>(in-situ U/Pb dating and high resolution provenance analysis) - a project</td>
<td>Beltrán-Triviño A., Winkler W., von Quadt A.</td>
</tr>
<tr>
<td></td>
<td>layout</td>
<td>Crameri F., Tackley P., Meilick I., Gerya T., Kaus B., Keller T.</td>
</tr>
<tr>
<td>1.4</td>
<td>One-sided subduction in self-consistent models of global mantle convection</td>
<td>Duretz T., Kaus B.J.P., Schulmann K., Gapais D.</td>
</tr>
<tr>
<td></td>
<td>the importance of a free surface and a weak crustal layer</td>
<td>Cavargna-Sani M., Epard J.-L., Masson H.</td>
</tr>
<tr>
<td>1.5</td>
<td>Lower crust extrusion triggered by indentation: Insight from analogue and</td>
<td>Haertel M., Herwegh M., Pettke T.</td>
</tr>
<tr>
<td></td>
<td>numerical modelling</td>
<td>Crameri F., Tackley P., Meilick I., Gerya T., Kaus B., Keller T.</td>
</tr>
<tr>
<td>1.6</td>
<td>2D Numerical modelling of a porous flow in a deforming viscoplastic</td>
<td>Dymkova D., Gerya T., Podladchikov Y.</td>
</tr>
<tr>
<td></td>
<td>matrix with finite differences and marker-in-cell techniques</td>
<td>Cavargna-Sani M., Epard J.-L., Masson H.</td>
</tr>
<tr>
<td>1.7</td>
<td>Discovery of fossils in the Adula nappe, new stratigraphic data and</td>
<td>Haertel M., Herwegh M., Pettke T.</td>
</tr>
<tr>
<td></td>
<td>tectonic consequences (Central Alps)</td>
<td>Madonna C., Tisato N., Boutareaud S., Burg J.-P.</td>
</tr>
<tr>
<td>1.8</td>
<td>State of the art of SWAM: Seismic Wave Attenuation Module</td>
<td>Madonna C., Tisato N., Boutareaud S., Burg J.-P.</td>
</tr>
<tr>
<td>1.9</td>
<td>Tectonic amalgamation and reworking of a sedimentary cover within a</td>
<td>Manzotti P., Robyr M., Zucali M., Engi M.</td>
</tr>
<tr>
<td></td>
<td>polydeformed basement in a subduction-collision zone: an example from the</td>
<td>Manzotti P., Robyr M., Zucali M., Engi M.</td>
</tr>
<tr>
<td></td>
<td>Western Italian Alps</td>
<td>May D.A, Kaus B.J.P</td>
</tr>
<tr>
<td>1.10</td>
<td>An optimal, scalable finite element based forward model for gravity</td>
<td>Pleuger J., Mancktelow N.</td>
</tr>
<tr>
<td></td>
<td>computations</td>
<td>Pleuger J., Mancktelow N.</td>
</tr>
<tr>
<td>1.11</td>
<td>The Canavese Fault west of Valle d’Ossola</td>
<td>Pleuger J., Mancktelow N.</td>
</tr>
<tr>
<td>1.12</td>
<td>B-type Olivine LPO in the Ronda Peridotite (Spain):</td>
<td>Précigout J., Hirth G. and Kunze K.</td>
</tr>
<tr>
<td>1.13</td>
<td>Evidence of high-Strength sub-Continental Mantle</td>
<td>Reverman, R.L., Fellin, M.G., Willett, S.D.</td>
</tr>
<tr>
<td>1.14</td>
<td>Low-temperature thermochronological constraints on the Miocene exhumation</td>
<td>Reverman, R.L., Fellin, M.G., Willett, S.D.</td>
</tr>
<tr>
<td></td>
<td>of the Adamello Complex, Southern Alps, Italy</td>
<td>Reverman, R.L., Fellin, M.G., Willett, S.D.</td>
</tr>
</tbody>
</table>
1.15 Rolf T., Tackley P. Influence of continents in mantle convection models with self-consistent plate tectonics


1.17 Schenker F. L., Fellin M. G., Burg J.-P. Structural and cooling history of the Eastern Pelagonian metamorphic core complex (northern Greece)

1.18 Schreurs, G., Buijter, S. and the GeoMod2008 Analogue Team Quantitative comparisons of analogue thrust wedge experiments

1.19 Sommaruga A., Eichenberger U., Marillier F. Seismic Atlas of the Swiss Molasse Basin: two example transects across the western and the eastern parts

1.20 Tackley P., Nakagawa T., Armann M., Keller T., van Heck H. Modelling the thermo-chemical evolution of the interiors of Earth, Venus, Mars, Mercury and super-Earths

1.21 Thust A., Heilbrunner R., Stüntz H. Dislocation glide in experimentally deformed natural quartz single crystals

1.22 Tumarkina E., Misra S., Connolly A.D.J. The effect of deformation on partial melting of metapelitic rock: an experimental study

1.23 van Heck H.J., Tackley P.J. Mantle convection, stagnant lids and plate tectonics on super-Earths


Session 2: Mineralogy - petrology - geochemistry
Room G140

Convenor: Eric Reusser

Chair: Eric Reusser

8:30-8:45 Parmigiani A., Huber C., Bachmann O., Chopard B. Reactive multiphase flow at the pore-scale: the melting of a crystalline framework during the injection of buoyant hot volatiles.

8:45-9:00 Ortelli M., Moritz R., Voudouris P., Cosca M., Spangenberg J. Tertiary porphyry and epithermal association of the Sapes-Kassiteres District, Eastern Rhodopes, Greece

9:00-9:15 Diamond L.W., Tarantola A., Stüntz H. Effects of deviatoric stress on natural fluid inclusions in quartz: an experimental study

9:15-9:30 Martin L.H.J., Schmidt M.W., Hametner K., Günther D. Element partitioning between immiscible silicate and carbonatite melts by centrifuge experiments
<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker(s)</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30-9:45</td>
<td>Meier M.F., Grobéty B.</td>
<td>Fumarolic aerosols from El Chichón volcano, Mexico</td>
</tr>
<tr>
<td>9:45-10:00</td>
<td>Lambrecht G., Diamond L. W.</td>
<td>Fluid boiling and mixing during latest stage orogenic gold mineralization at Brusson, NW Italian Alps</td>
</tr>
<tr>
<td>10:00-11:00</td>
<td><strong>Morning poster session with coffee</strong></td>
<td></td>
</tr>
<tr>
<td>11:00-11:15</td>
<td>Huber C., Bachmann O., Dufek J.</td>
<td>Thermo-mechanical reactivation of locked crystal mushes: melting-induced internal fracturation and assimilation processes in magmas</td>
</tr>
<tr>
<td>11:15-11:30</td>
<td>El Korh A., Schmidt S.Th., Ballèvre M., Bruguier O.</td>
<td>U–Pb geochronology of an orthogneiss discovered within the HP–LT metamorphic rocks of the Ile de Groix, Armorican Massif, France</td>
</tr>
<tr>
<td>11:30-11:45</td>
<td>Skopelitis A., Schaltegger U., Ulianov A., Brack P.</td>
<td>The Adamello batholith (Italy): a fossil magma chamber or accumulation of magma pulses?</td>
</tr>
<tr>
<td>11:45-12:00</td>
<td>Hermann J., Rubatto D.</td>
<td>Pre-Alpine metamorphism in the classical Alpine staurolite-garnet schist of Campolungo</td>
</tr>
<tr>
<td>12:00-12:15</td>
<td>Regis D., Engi M., Rubatto D., Darling J.</td>
<td>Complex dynamics in the Sesia Zone subduction system deduced from multiple generations of white mica and allanite: the power of microtextural analysis combined with petrochronology</td>
</tr>
<tr>
<td>12:30-14:00</td>
<td><strong>Lunch</strong></td>
<td></td>
</tr>
<tr>
<td>14:00-14:15</td>
<td>Vils F., Elliott T., Smith-Duque C.E., Alt J.C., Teagle D.</td>
<td>How long does seawater and oceanic crust interact?</td>
</tr>
<tr>
<td>14:15-14:30</td>
<td>Westermann S., Stein M., Matera V., Fiet N., Adatte T., Föllmi K. B.</td>
<td>Palaeoredox change during OAE 1a: new insights from phosphorus and redox-sensitive trace elements</td>
</tr>
<tr>
<td>14:45-15:00</td>
<td>Tămaș C.G., Munteanu G., Cauuet B., Mut G.</td>
<td>Mining archaeological studies in Eastern Pyrenees, France: Baillestavy iron mining area</td>
</tr>
<tr>
<td>15:00-16:00</td>
<td><strong>Afternoon poster session with coffee</strong></td>
<td></td>
</tr>
</tbody>
</table>
Posters of session 2 between G120 and G140

2.1 Abidi R., Sslim-Shimi N., Hatira N., Marignac Ch., Gasquet D., Mejri Z. Approche microthermométrique pour la détermination de l’origine hydrothermal de fluide minéralisateur du gisement à Pb-(Zn)-Sr-Ba d’El Aguiba (Tunisie septentrional)

2.2 Bauer, K., Vennemann, T., Mulch, A. Reconstruction of Neogene paleoelevation and paleoclimatic conditions of the European Alps and the circum-Alpine region by stable isotope analyses

2.3 Cavargna-Sani M., Epard J-L., Bussy F., Ulíanov A. Zircon U/Pb dating of the Late Carboniferous Zervreila Orthogneiss, Adula Nappe

2.4 Hunziker D., Caddick M., Reusser E., Burg J-P., Müller E. The influence of ferric/ferrous iron ratios in bulk and minerals of blueschists from the Inner Makran (SE Iran) on thermobarometric recalculations

2.5 Hürlimann N., Müntener O., Ulmer, P. Subvolcanic mafic to intermediate dike-systems: constraints on post-plutonic activity (S-Adamello, N-Italy)

2.6 Katona I., Serneels V. The pigments of the medieval painters in Fribourg: Investigation of a top quality mural painting from the Cordeliers Church in Fribourg

2.7 Kayani S. Combustion analysis of a meteorite debris

2.8 Kocsis L., Ounis A., Chaabani F., Naili S. M. New isotope data from the Late Cretaceous and Paleogene phosphate beds of the Gafsa Basin, Tunisia

2.9 König D., Serneels V. Geochemical and mineralogical examinations of roman crucibles from Autun (France)

2.10 Maggetti M., Morin D., Serneels V., Neururer C. Kiln furnitures from the faience manufacture of Granges-le-Bourg (Haute Saône, France): contrasting recipes

2.11 Maggetti M., Rosen J., Serneels V., Neururer C. The faience manufacture Le Bois d’Épense (North-eastern France, 18/19th century)


2.13 Mattsson H.B., Bosshard S.A., Hetényi G., Almqvist B.S.G., Hirt A.M., Caricchi L., Caddick M. Internal flow structures in columnar jointed basalt from Hrepphólar, Iceland


2.15 Moulas E., Connolly J., Burg J-P., Kostopoulos D. Refining the granulite-facies metamorphism in the Rhodope metamorphiccomplex - Greece

2.16 Pretet C., Felis T., Samankassou E. Constraining calcium isotope fractionation in corals

2.17 Serneels V. Thousand years of massive iron production in the Dogon Country (Mali, West Africa): technology – economy - environment

2.18 Soulignac R. Mineralogical techniques and ethnoarchaeology applied to the study of smithing slags in Mali (Africa)

2.19 Thierrin-Michael, G. Fossiliferous pottery in Ajoie (NW Switzerland) and adjacent regions from La Tène and Gallo-roman sites: Information on production and distribution through microscopic and chemical analyses
2.20 Trittschack, R., Grobéty, B.
Insights into the dehydroxylation kinetics of lizardite and chrysotile

2.21 Verberne R., Ulmer P., Münntener O.
Calculating rheologic properties of magmas from field observations combined with experimental data.

2.22 von Allmen K., Böttcher M.E., Samankassou E., Nägler T.F.
Barium isotope fractionation in natural barium minerals and precipitation experiments: A first glimpse at the global barium cycle

2.23 Wongfun N., Furrer G., Brandl H., Plötze M.
Influence of extrinsic weathering factors on mineral dissolution in Damma glacier forefield

Water-soluble salts and temperature variation in meteorites recovered in the hot desert of Oman

Session 3: Himalayan geology: A tribute to Augusto Gansser on his 100th anniversary
Room A140

Convenors: Guido Schreurs, Neil Mancktelow, Ruedi Hänny, Jean-Pierre Burg

Chair: Guido Schreurs
14:05-14:20 Burg J.-P. 
Himalayan Geology: A tribute to Augusto Gansser on his 100th anniversary

14:20-14:40 Molnar, P.
The upward and outward growth of northeastern Tibet and geodynamic implications

14:40-15:00 Grujic D., Warren C. J., Kellett D. A., Wooden J. L.
Syn-collisional exhumation of the continental lower crust

15:00-16:00 Afternoon poster session with coffee
Chair: Jean-Pierre Burg
16:00-16:20 Steck A., Epard, J.L.
Structural development of the Tso Morari ultra high pressure nappe of the Ladakh Himalaya

16:20-16:40 Rubatto D., Chakraborty S., Dasgupta S.
Protracted melting in the Higher Himalayan Crystalline (Sikkim, India)

16:40-17:00 Grasemann B.
Fold growth in the Zagros fold-and-thrust belt in Kurdistan (NE-Iraq)
Posters of session 3
between A120 and A140

3.1 Dolati A., Bernoulli D.,
Burg J.-P., Smit J., Müller
C., Spezzaferri S., Sergey
S. Sedimentology and stratigraphy of the Makran accretionary
wedge in Iran

3.2 Dolati A., Burg J.-P.,
Smit J., Bernoulli D. Structural analysis of central Makran accretionary wedge
(SE Iran)

3.3 Dolati A., Seward D.,
Smit J., Burg J.-P. Tectonic evolution of Makran accretionary wedge (SE Iran)
using low temperature thermochronology and tectono-
stratigraphic evidences

3.4 Jalali A., Dolati A.,
Bernoulli D., Burg J.-P. Preliminary results of Cretaceous-Eocene sediment analysis
of Makran accretionary wedge in SE Iran

3.5 Monsef I., Rahgoshay
M. Compositional variations and geodynamic implications of
the Mesozoic island arc magmatism in the Sanandaj-Sirjan
arc-basin system

3.6 Rahn M., Wang, H. Metamorphic and denudation patterns of the Songpan-
Garzê flysch in Sichuan Province, China

Session 4: Palaeontology and palaeobiodiversity
Room C230

Convenors: Lionel Cavin, Jean-Pierre Berger

Chair: Christian Klug

9:00-9:20 De Baets K., Klug C., Korn D. Early Emsian Ammonoidea: stratigraphy,
intraspecific variability, and evolutionary
trends

9:20-9:40 Ware D., Bucher H.,
Brühwiler T., Goudemand N. Dienerian (Early Triassic) ammonoid
successions of the Tethys: preliminary
results from Pakistan and India

9:40-10:00 Chablais J, Martini R, Onoue
T. Upper Triassic reef biota from southwestern
Japan: new data from a Panthalassan
seamount

10:00-11:00 Morning poster session with coffee

Chair: Damien Becker

11:00-11:20 Lavoyer T., Berger J.-P. Stratigraphy and paleogeography of the
North- Middle Upper Rhine Graben (N-
Middle URG) during the Paleogene.

11:20-11:40 Mennecart B., Becker D.,
Berger J.-P. Swiss Amphitragulus and Dremotherium
(Mammalia Ruminantia): state of the art

11:40-12:00 Scherler, L., Becker, D.,
Berger, J.-P. A tooth tale: the Anthracotherium
bumbachense (Artiodactyla, Mammalia)
from Beuchille (Delémont, Switzerland)
### 12:00-14:00 Lunch

*Chair: Daniel Marty*

- **14:00-14:20 Klug, C., De Baets, K., Korn, D.**
  - Devonian pearls and ammonoid-endoparasite co-evolution

- **14:20-14:40 Pirkenseer C., Steurbaut E., Speijer, R.**
  - The evolution of Early Ypresian microfossil assemblages and stable isotopes during a distinct plankton peak in the Corbières (Aude, France) continental margin record

### 14:40-15:00 Swiss Commission of Palaeontology Prize

### 15:00-16:00 Afternoon poster session with coffee

---

**Posters of session 4 in front of C230**

| 4.1 Bomou B., Arnaud-Vanneau A., Adatte T. | Stratigraphy and ecology of large benthic foraminifera during the Cenomanian-Turonian transition: new insights from the Morelos-Guerrero carbonate platform, southwestern Mexico |
| 4.2 Chablais, J., Feldmann R.M., Schweitzer C.E., Martini R., Rigaud S. | Triassic decapods: new data from the Arabian shelf of the northern United Arab Emirates |
| 4.3 Klug, C., De Baets, K., Monnet, C. | Parallel evolution controlled by adaptation and covariation in ammonoid cephalopods |
| 4.4 Marty D., Paratte G., Lovis C., Jacquemet M., Meyer C.A. | Extraordinary sauropod trackways from the Late Jurassic Béchat Bovais tracksite (Canton Jura, NW Switzerland): implications for sauropod locomotor styles |
| 4.5 Ospina-Ostios L.M., Ragusa J., Kindler P. | New biostratigraphic data from the Voirons Sandstones (Voirons massif, Haute-Savoie, France): implications for the paleogeographic origin of the Gurnigel Nappe |
Session 5: Lithostratigraphic units for the Swiss geological maps: state of the art
Room B130

Convenor: Jean-Pierre Berger

Chair: J.-P. Berger

9:00-9:20 Strasser A., Weissert H. New developments in stratigraphic nomenclature
9:20-9:40 Burkhalter R., Möri A. Harmonising geological map legends – a challenge for the Swiss stratigraphic community
9:40-10:00 Berger J.-P., Kaelin D., Kempf O. Swiss Molasse lithostratigraphy
10:00-10:15 All Discussion
10:15-11:00 Morning poster session with coffee

Posters of session 5
in front of B130

5.1 Ragusa J., Ospina-Ostios L.M., Kindler P. Petrography and granulometry of the Gurnigel Flysch from the Voirons and Vouan massifs (Chablais Prealps, Haute-Savoie, France): preliminary results
5.2 Berger J.-P., Kaelin D., Kempf O. Swiss Molasse Lithostratigraphy

Session 6: Natural hazards and risks in Alpine geology
Room A140

Convenors: Marco Schwab, Jon Mosar, Michel Jaboyedoff, Manfred Thüring

Chair: Marco Schwab

9:00-9:15 Broennimann C., Michoud C., Nicolet P., Jongmans D., Baron L., Jaboyedoff M., Tacher L. The active Pont Bourquin landslide (Les Diablerets, VD): a combined geophysical, hydrogeological and ground-based remote sensing survey
9:15-9:30 Dammeier F., Moore J., Haslinger F., Loew S. Seismic signal analysis of rockslide events in the Swiss Alps
9:30-9:45 Deubelbeiss Y., Graf C., McArdell B., Bartelt P. Numerical modeling of debris flows – Case study at Dorfbach, Randa (VS)
9:45-10:00 Wirth S.B., Glur L., Gilli A., Anselmetti F.S. Reconstruction of the Holocene flood history for assessing the future flood hazard in the Central Alps (FloodAlp project)
10:00-11:00 Morning poster session with coffee

Chair: Jon Mosar

11:00-11:15 Rudaz B., Jaboyedoff M.
Historical activity of the Saint-Barthélémy stream (VS) – old data, new look

11:15-11:30 Faillettaz J., Sornette D., Funk M.
Climate warming and stability of hanging glaciers: lessons from the 1895 Altels break-off

11:30-11:45 Kos A., Schaer P., Signer A., Strozzi T., Valenti G., Loew S.
A remote sensing application for hazard analysis at Alp di Roscioro, Canton Tessin

11:45-12:00 Humair F., Pedrazzini A., Jaboyedoff M., Epard J.L., Froese C.
Movements characterization along open back crack affecting Turtle Mountain, Alberta, Canada

12:00-12:15 Bejaoui J., Samaali M., Baccouche S., Reguigui N., Ben Hamouda M.F., Azzouz Z., Trabelsi A., Bouhlel S., Boulamia S.
Hazard of naturally occurring radioactive material from Tunisian and Algerian phosphorite

12:15-14:00 Lunch

Posters of session 6 between A120 and A140

6.1 Gischig, V., Moore, J. R., Evans, K.F., Loew, S.
Thermal effects on seasonal variability of deformation rate at the Randa rock slope instability, Valais

6.2 Glur L., Anselmetti F.L., Gilli A., Kägi R.
Detailed characterisation of thinnest lake sediment deposits using scanning electron microscopy.

6.3 Moore J.R., Burjanek J., Gischig V., Löw S., Fäh D.
Investigating the seismic response of a large rock slope instability (Randa, VS)

6.4 Nicolet P., Jaboyedoff M., Gerber C., Giorgis, D.
Representation problems of danger and “risks” maps
Session 7: Geomorphology
Room C120


Chair: Reynald Delaloye

8:30 - 8:50 Bast A., Kneisel, C. Small-scale permafrost distribution and its influencing parameters in an alpine glacier forefield

8:50 - 9:10 Salcher B.C., Kober F., Willett, S.D. Present erosion and landscape evolution in the glacially overprinted Alps

9:10 - 9:30 Beaud F., Herman F., Champagnac J.-D. Influence of hydrology on spatial patterns of glacial erosion

9:30 - 9:50 Molnar P., Densmore A.L., McArder B.W., Turowski J.M., Burlando P. Flood-induced changes in the step-pool morphology of a steep mountain stream

9:50 - 10:10 Champagnac J.-D., Sernai P., Herman F., Guralnik B., Beaud F. Fracture density as a controlling factor of postglacial fluvial incision rate, Granite Range, Alaska

10:10-11:10 Morning poster session with coffee

Chair: Emmanuel Reynard

11:10 - 11:30 Fister W., Iserloh T., Roche M.A., Ries J.B. Influence of land use and climate change on wind erosion susceptibility in central Aragon (Spain)

11:30 - 11:50 Schwanghart W., Jarmer T. Variability of topsoil organic carbon in semi-arid areas at different spatial scales

11:50 - 12:10 Strähl S.C., Kuhn N.J. Vegetation border lines and border line ecotones influenced by geomorph dynamic processes. An example of the timber line development since 1920 in the area of Grindelwald (Bernese Oberland)

12:15 -12:45 SSGm General Assembly

12:45-13:40 Lunch

Chair: Michelle Bollschweiler

13:40 – 14:00 Champagnac J.-D., Molnar P., Sue C. Relations among tectonic shortening, climate, and relief creation in mountain ranges

14:00 - 14:20 Kuhlemann, J., Rahn, M. Late Miocene to Present landscape evolution in Northern Switzerland

14:20 - 14:40 Guralnik B., Herman F., Lowick S.E., Preusser F., Rhodes E.J. Preliminary constraints on the kinetics of OSL thermochronology

14:40-15:30 Afternoon poster session with coffee
Posters of session 7  
in front of B130

7.1 Barboux C., Delaloye R.  Analysing the pluri-decennial development of a rock glacier crisis using repeated SAR interferometry, terrestrial and airborne optical data

7.2 Bast A., Gärtnert H., Gärtnert-Roer I.  If trees have cold feet: Tree-ring analyses of Larix decidua Mil. at a sporadic permafrost site in the Swiss Alps

7.3 Bennett G., Molnar P., Korup O., McArdell B.  Modelling sediment transfer through mountain basins

7.4 Bergamaschi, S., Delaloye, R.  Year-round changes in snow cover on the east and north faces of Matterhorn

7.5 Bernasconi L., Reynard E.  Hydropeaking on watercourses: an analysis of the effects on erosion, transport and sedimentation of material in the Moesa and the Morobbia rivers (GR/TI)

7.6 Scapozza C., Lambiel C., Abbet D., Delaloye R., Hilbich C.  Internal structure and permafrost characteristics of the Lapires talus slopes (Nendaz, Valais)

7.7 Sternai P., Herman F., Fox M., Castelltort S.  Hypsometric analysis of glacial landscapes and its application to the European Alps

7.8 Werren G., Lasri M., Reynard E., Obda K.  Flood hazard mapping in two Moroccan watersheds

7.9 Zeilinger G., Kober F., Hippe K.  Morphometric parameters and denudation rates in the Eastern Cordillera, Bolivia, affected by crustal bending?

Session 8: Quaternary research
Room C140

Convenor: Naki Akçar

Chairs: N. Akçar, S. Ivy-Ochs

8:30-9:00  Schlüchter C., Burkhalter R.  Switzerland at the Last Glacial Maximum (LGM). A new map (2009) by swisstopo 1 : 500 000

9:00-9:20  Preusser F., Graf H.R., Keller O., Krayss E., Schlüchter C.  Quaternary glaciation history of northern Switzerland


9:40-10:00  Stumm D., Fischer U.H., Schnellmann M., Haeberli W.  A review on tunnel valleys in northern Europe

10:00-11:00  Morning poster session with coffee
Reconstructing the deglaciation history of the Gotthard Pass area, Central Swiss Alps, using cosmogenic $^{10}$Be and in-situ $^{14}$C

Surface exposure dating of 1717 AD rock avalanche deposits in the upper Ferret Valley (Italy) with cosmogenic $^{10}$Be

How did fire, human impact and climate change affect Holocene treeline dynamics in the Alps? A case of study from Gouille Rion (Valais, Switzerland)

European climate change at the end of the last glaciation: chironomid-based temperature reconstruction on a continental scale

Chironomids as indicators of the past 1000 years of mean July air temperatures: the Sivaplana and Seebergsee records

Climate in the southern Black Sea coast during the Holocene: implications from the Sofular Cave record

Pre-Columbian human adaptation to seasonal inundations in the Llanos de Moxos, Bolivian Amazonia.

Organic and mineral sedimentary deposits in the evaporators’ environments of the Sahel of Tunisia (Mahdia): the Baghdadi swamp and the conjugated sebkha of Gotaia and Eliane

Origin of Bahamian laminar crusts: new geochronological and petrographic data

High-resolution sediment colour and geochemical analysis of Dansgaard-Oeschger events (Cariaco Basin, Northern Arabian Sea)

Rhone glacier deglaciation in western Lake Geneva: new sismo- and biochronostratigraphy results

Incision and deformation recorded by Quaternary fluvial terraces in Makran accretionary wedge, SE-Iran
8.5 Haudenschild E., Akçar N., Yavuz V., Ivy-Ochs S., Alfimov V., Kubik P.W., Schlüchter C.  
The Kestanbol Granite (Western Turkey) and its importance as a building stone: Application of cosmogenic $^{10}$Be to an archaeological problem

8.6 Kind J., Hirt A., van Raden U.  
Do magnetic properties reflect climate history in Swiss lakes?

8.7 Kremer K., Girardclos S.  
Giant sub-lacustrine mass movement in Lake Geneva sediment record

8.8 Laigre, L., Reynard, E., Arnaud-Fassetta, G., Baron, L., Lambiel, C.  
Contribution of geoelectrical measurements and shallow drillings for detection of Holocene palaeochannels in the Saillon region (Valais)

8.9 Malatesta L., Castelltort S., Picotti V., Mantellini S., Hajdas I., Simpson G., Willett S.  
Holocene climatic variability in Central Asia; a geoarchaeological case study in Samarkand, Uzbekistan

8.10 Ott A., Ivy-Ochs S., Bauder A., Akçar N., Schlüchter C.  
Holocene glacier oscillations at Damma

8.11 Plotzki A., Veit H.  
Holocene landscape evolution of the Llanos de Moxos, NE Bolivia

8.12 Reber R., Tikhomirov A.D., Akçar N., Yavuz V., Schlüchter C.  
Quaternary glacial chronology in Anatolia

8.13 Samartin S., Heiri O., Tinner W.  
Late Glacial and early Holocene climatic changes in the Southern Swiss Alps, reconstructed using subfossil chironomid assemblages

8.14 Schlüchter C., Burkhalter R.  
Switzerland at the Last Glacial Maximum (LGM) A new map (2009) by swisstopo 1 : 500 000

8.15 Schmitt J., Seth B., Fischer H.  
How to derive weathering rates from ice core measurements of atmospheric tetrafluoromethane?

8.16 Tikhomirov D., Alfimov V., Akçar N., Ivy-Ochs S., Schlüchter C.  
Detection of volcanic ash layers by high-resolution XRF core scanning

8.17 van Raden U., Gilli A., Kind J.  
Calibration of $^{36}$Cl production rate on $^{39}$K in saturated Antarctica samples

8.18 Zech J., Zech R., Kubik P.W., Veit H.  
How does the elemental composition of Swiss lake sediments reflect past climate conditions?

Past glaciation in the Central Andes record alteration in the tropical circulation and the Southern Westerlies
Session 9: Trusting on soils in a changing world?
Room C130

Convenors: Samuel Abiven, Pascal Boivin, Elena Havliceck, Roxane Kohler Milleret, Claire Le Bayon

Chair: S. Abiven

Evaluation of the effect of root exudates on the structure of two different soils

9:40-10:00 Villacres D., Guiné V., Freyre N., Boivin P.
Contribution of earthworms in the maintenance of biobeds

10:00-11:00 Morning poster session with coffee

Chair: S. Abiven

11:00-11:20 Wilcke W., Ruppenthal M., Schwarz M.T., Oelmann Y.
Stable H and N isotope approaches to assess soil organic matter turnover and N transformations in ecosystems

11:20-11:40 Hasinger O., Millière L., Verrecchia E. P., Cailleau G., Spangenberg J. E.
Carbon cycle in a scree slope soil: from organic matter to secondary carbonate (Villiers, Jura Mountains, CH)

11:40-12:00 Martignier L., Verrecchia E.
Pleistocene vs Holocene impact on soils: an example from the Jura Mountains

12:00-14:00 Lunch

Chair: S. Abiven

Shifting paradigms - soil organic matter turnover in a changing world

14:20-14:40 Bandowe BAM., Wilcke W.
Oxygenated polycyclic aromatic hydrocarbons in soil

14:40-15:00 Maestrini B., Singh N., Abiven S., Schmidt M. W.I.
BC loss processes in a temperate forest topsoil: a long-term field manipulation experiment

15:00-16:00 Afternoon poster session with coffee

Posters of session 9 in front of C130

9.1 Bigalke, M., Kersten, M., Kobza, J., Weyer, S., Wilcke, W.
Cu and Zn stable isotopes as tracers for sources, transport and biogeochemical transformations of Cu and Zn in polluted soils and sediments

9.2 Blanc N., Hassouna M., Pfeifer H.-R.
Environmental contamination of alpine soils in the Mont-Blanc massif by arsenic

9.3 Burri S., Sturm P., Knohl A., Buchmann N.
Impacts of summer drought on short-term reactions of plant and soil gas exchange of a managed lowland grassland in Switzerland
9.4 Hoffmann, U., Kuhn, N.  
Soil organic carbon in the rocky desert of northern Negev (Israel)

9.5 Melis S., Boivin P., Guiné V., Abiven S., Krebs R.  
Cobaltihexamine and Metson CEC measures on different organic surfaces (biochars and hydrothermal chars)

9.6 Pfund S., Guenat C., Le Bayon C., Verrecchia E., Bullinger-Weber G.  
Emme River (BE) restoration project: how to evaluate its success using soil parameters?

9.7 Sadri S., Wilcke W.  
Initial analysis of a 10-year pH time series of litter leachate in an Ecuadorian catchment

9.8 Salomé C., Guenat C., Bullinger-Weber G., Gobat J.-M., Le Bayon R.C.  
Structure formation in carbonate-rich alluvial soils along an altitudinal gradient: roles of lithogenic characteristics and biological agents

9.9 Schwarz M.T., Bischoff S., Krüger L., Michalzik B., Siemens J., Wilcke W.  
Land-use intensity and biodiversity as controls of element cycling

**Session 10: Cryosphere**  
Room E120, posters in front of E130


Chair: Jürg Schweizer

9:15-9:25  
Opening Poster introduction session

9:25-9:28  
10.1 Boeckli L., Brenning A., Noetzli J., Gruber S.  
An empirically-based permafrost distribution model for the entire Alps

9:28-9:31  
10.2 Lambiel C., Baron L.  
Mapping ground ice distribution in an ice-cored moraine with electrical resistivity tomography, Col des Gentianes, Swiss Alps

9:31-9:34  
10.3 Scapozza C., Baron L., Lambiel C.  
Borehole logging in alpine periglacial talus slopes, Valais Alps, Switzerland

9:34-9:37  
10.4 Scherler M., Hauck C.  
Modelling of permafrost evolution under climate change scenarios

9:37-9:40  
10.5 Walthard P., Gulley J., Benn D., Martin J.  
Using speleological methods to test dye tracing interpretations in glaciology

9:40-9:43  
10.6 Huss M., Stokvis M., Salzmann N., Hoelzle M.  
Towards short-term monitoring of glacier mass balance and snow accumulation distribution

9:43-9:46  
10.7 Huss M., Machguth H., Jörg P., Zemp M., Salzmann N., Linsbauer A., Hoelzle M.  
Re-analysis of mass balance measurements on Findelengletscher 2005-2009
9:46-9:49  
**10.8** Linsbauer A., Paul F., Künzler M., Frey H., Haeberli W.  
Formation of new lakes in deglaciating regions of the Swiss Alps

9:49-9:52  
**10.9** Nath S.K., Huss M.  
Glaciological investigations on three glaciers at Les Diablerets, Alpes Vaudoises

9:52-9:55  
**10.10** Salzmann N., Machguth H.  
The Swiss Alpine glacier’s response to the 2°C target

**10:00-11:00** Morning poster session with coffee  
*Chair: Jeanette Nötzli*

11:00-11:20  
Zenklusen Mutter E., Phillips M.  
Active Layer development in Alpine permafrost

11:20-11:40  
Schneider S., Hoelzle M.  
Investigation of the high variability of mountain permafrost

11:40-12:00  
Morard S., Bochud M., Delaloye R.  
Rapid changes of the ice mass configuration in the dynamic Diablotins ice cave– Fribourg Prealps, Switzerland

**12:00-14:00** Lunch  
*Chair: Andreas Bauder*

14:00-14:20  
Keller A., Funk M.  
Ice deformation measurement in boreholes on Rhonegletscher

14:20-14:40  
Gabbi J., Farinotti D., Bauder, A.  
Past and future changes and impacts on runoff conditions in the Mauvoisin region

14:40-15:00  
Etzelmüller, B., Farbrot, H., Guomundsson, A.  
Seven years of permafrost monitoring in Iceland - updated results and geomorphological implications

15:00-15:20  
Eugster M.  
Snow, ice and permafrost study in Swiss schools: From local student observations to global understanding

**15:20-15:50** Coffee break  
*Chair: Martin Hoelzle*

**15:50-16:00** SEP Young Scientist Awards

16:00-16:20  
Lüthi M.P., Bauder A., Funk M.  
Volume change reconstruction of Swiss glaciers from length change data

16:20-16:40  
Huss M.  
Present and future contribution of glacier storage change to runoff from macroscale drainage basins in Europe

16:40-17:00  
Permafrost carbon dynamics controlled by atmospheric CO₂ and Pleistocene climate
Session 11: Meteorology and climatology
Room E140

Convenors: Rolf Philipona, Markus Furger

Chair: Rolf Philipona

9:00-9:15 Hiller R., Stieger J., Neininger B., Buchmann N., Eugster W.
Aircraft and ground based CH₄ measurement of a high moor in Switzerland

9:15-9:30 Hurter F., Perler D., Geiger A.
Monitoring atmospheric water vapor in the Zermatt region with GNSS

9:30-9:45 Hächler P.
Schneefrühwarnungen in den Schweizer Alpen

9:45-10:00 Willi M., Frei C.
Gridding of daily sunshine duration by combination of station and satellite data

10:00-10:15 Calanca P., Philipona R., Trebejo I., Alarcón Velazco C.
Simple approaches to the evaluation of net radiation and reference evapotranspiration

10:15-11:00 Morning poster session with coffee

Chair: Markus Furger

11.00-11:15 Brönnimann, S.
Weather extremes in the past 140 years in a historical reanalysis data set

Climate of the Little Ice Age: a Mediterranean-scale anomaly pattern with LGM similarities

11:30-11:45 Strauss F., Formayer H., Asamer V., Schmid E.
High resolution climate change data for Austria until 2040

11:45-12:00 Sesartic A., Dallafior T., Storelmo T., Lohmann U.
Modelling global emissions of bacteria and fungal spores acting as ice nuclei

12.00-12:15 Ediang Okuku Archibong, Ediang A Archibong
Dynamics of abrupt climatic change over the climate regions in Nigeria

12:15-13:15 Lunch

13:15-14:00 Administrative Sitzung der Schweizerischen Gesellschaft für Meteorologie (SGM)
Chair: Rolf Philipona

14:00-14:20 Neininger B., Schneider B., Oldani D.
Invited lecture: Airborne observation of the Eyjafjallajökull volcanic ash plume over Switzerland

Invited lecture: Detection of Eyjafjoll volcano ash at Jungfraujoch, Switzerland

14:40-15:00 Henne S., Brunner D.
Invited lecture: Simulating the dispersion of the Eyjafjalla volcanic ash plume over Europe

15:00-16:00 Afternoon poster session with coffee
Posters of session 11
in front of E130

11.1 Perler D., Geiger G.,
Rothacher M.          Water vapor retrieval with parameterized GPS
tomography: longterm study in Switzerland

11.2 Weibel, B., Röser, I.,
Liniger, M., Appenzeller, C.  NCCR climate related research at MeteoSwiss - the Swiss
climate of today and tomorrow

Session 12: Phenology and seasonality
Room E130

Convenors: This Rutishauser, Martine Rebetez, Thomas Herren

Chair: This Rutishauser

9:00-9:20 Dobbertin, M., Baltensweiler,
W., Giuggiola A., Li M.-H.,
Cherubini, P.           50 years of needle length measurements on
Larch in the Engadin Valley closely reflect
spring temperature changes

9:20-9:40 Clot B., Gehrig R.            Airborne pollen: phenological aspects and
observed trends

9:40-10:00 Egli S., Ayer F., Franc A.   Trends in fruiting phenology of wild forest
mushrooms from 1975-2006 in the fungus
reserve La Chanéaz (FR)

10:00-10:20 Rixen C.                     Changes in alpine plant phenology under
future climate conditions

10:20-11:00 Morning poster session with coffee

Chair: Martine Rebetez

11:00-11:20 Rutishauser T.,
Mitinitiantinnen und -
initianten          KPS – eine Kommission für Phänologie und
Saisonalität bei der «Plattform Geosciences»

11:20-11:40 Herren T., Meier N., Rotach
M.W., Liniger M.A.,
Appenzeller C.    The Swiss Spring Index as a novel integral
metric for spring phenology

11:40-12:00 Kottmann D.                  A comparison of ground-based phenological
observations and NOAA AVHRR NDVI data

12:00-12:20 Eugster M.                   Phenological and seasonal observations in
Swiss schools

12:20-14:00 Lunch
Chair: Thomas Herren

14:00-14:20 Basler, D. and Körner, Ch.
Spring flush of native forest trees at rising spring temperatures is controlled by photoperiodism and temperature

14:20-14:40 Morin X., Chuine I., Bugmann H.
Predicting the impact of warming on tree phenology: experimental and modelling results

14:40-15:00 Wolf S., Eugster W., Buchmann N.
Ecosystem carbon budgets of tropical pasture versus afforestation

15:00-16:00 Afternoon poster session with coffee

Posters of session 12
in front of E130

12.1 Bloesch B., Spring J.-L., Viret O., Dubuis P.-H.
Climate change and grapevine’s vegetative growth development in Western Switzerland

12.2 Dobbertin M.
Forest phenology and extreme climatic events

12.3 Hansmann, J., Loew, S., Evans, K.F.
REROD – A mathematical model for reversible rockslope deformations, caused by seasonal variations in the groundwater table, observed in the central Swiss Alps

12.4 Rutishauser T., Brügger R., Jeanneret F.
Altitude, slope and aspect: Are there local-scale effects in temporal trends in a spatially high-resolved plant phenological network in the Swiss Alps 1971–2000?

12.5 Vitasse Y., François C., Delpierre N., Dufrêne E., Kremer A., Chuine I., Delzon S.
Assessing the effects of climate change on the phenology of European temperate trees
## Session 14: Geoscience and geoinformation - from data acquisition to modelling and visualisation

**Room D130**

**Convenors:** Nils Oesterling, Adrian Wiget, Massimiliano Cannata

*Chair: Adrian Wiget*

### 9:20-9:40

**North R.P., Livingstone D.M.**

**Comparison of cubic splines and linear interpolation methods for lake time series analysis**

### 9:40-10:00

**Wannaz C., Fantke P., Rainer F., Jolliet O.**

**Multi-scale, multimedia modeling to compare local and global life cycle impacts on human health**

### 10:00-11:00 Morning poster session with coffee

*Chair: Massimiliano Cannata*

- **11:00-11:20** Wu J., Gilliéron P., Merminod B.
  - An integrated methodology for change detection via terrestrial laserscanning: case study of the landslide in Flamatt

- **11:20-11:40** Molinari M., Cannata M., Troung X.L.
  - WPS application for shallow landslide hazard assessment

- **11:40-12:00** Antonovic M., Cannata M.
  - Authentication and authorization management to ogc services with Geoshield: introducing Web Feature Service protection

### 12:00-14:00 Lunch

*Chair: Nils Oesterling*

- **14:00-14:20** Bilgot S., Parriaux A.
  - GIS-based 3D modelling for landslide hazard assessment: increasing the objectivity of hazard maps.

- **14:20-14:40** Jolimet T., Tacher L., Parriaux A., Weidmann M., Giorgis D.
  - Première étape de la modélisation géologique 3D du canton de Vaud : la feuille de Nyon

- **14:40-15:00** Jordan, P.
  - 3D geological mapping and visualisation as a tool for the analysis of overdeepened valleys

### 15:00-16:00 Afternoon poster session with coffee

*Chair: Adrian Wiget*

- **16:00-16:20** Baumberger R., Bossart P.
  - 3D-Mont Terri-Borehole-Information-System

- **16:20-16:40** Burri T., Kündig R., Sinreich M.
  - The hydrogeological map of Switzerland 1:100’000: from a pure print product of the 1970’s to an interactive GIS-tool

- **16:40-17:00** Oesterling N., Kühni A.
  - Geology Portal - enhancing the availability of geological information
Posters of session 14 in front of D130

14.1 Almqvist B.S.G., Zappone A., Bruijn R.H.C., Diamond L.W., Ramseyer K., Burg J.-P.
Physical and mechanical characterization of potential reservoir and cap rocks for geological storage of carbon dioxide in Switzerland

14.2 Ambrosi C.
The landslide inventory of Canton Ticino: statistical analysis and updating issues

14.3 Ambrosi C., Bernoulli D., Soma L.
Quaternary geologic map of Mendrisiotto (Ticino)

14.4 Ambrosi C., Cannata M.
MIARIA - adaptive hydrogeological monitoring supporting the Area Integrated Risk Plan

14.5 Baruffini, M., Ambrosi, C.
A GIS-tool for risk assessment due to natural hazards in mountain regions. An exploratory study on a hypothetical event: the Val Canaria flood

Session 15: Decision oriented modelling of the geosphere
Room E230

Convenors: Michael Stauffacher, Hans-Rudolf Egli, Otto Smrekar

Chair: H.-R. Egli, M. Stauffacher

11:00-11:10 Stauffacher M., Egli H.-R., Smrekar O.
Introduction

11:10-11:30 Hauck C., Hoelzle M., Salzmann N.
Communication of uncertain cryospheric model results in the view of the public environmental awareness

11:30-11:50 Bugmann H.
Global Change, goods and services from mountain ecosystems, and stakeholders

11:50-12:30 Stauffacher M., Förster, R.
Discussion

12:30-14:00 Lunch

14:00-14:20 Scheringer M.
How free are we in our choices of methods for scientific work in transdisciplinary projects?

14:20-14:40 Zinsstag J.
Cross-species transmission modelling and economics of zoonotic diseases

14:40-15:00 Schneider F.
Bridging science and society through transdisciplinary research

15:00-15:45 Stauffacher M., Förster, R.
Discussion

15:45-16:00 Stauffacher M., Egli H.-R., Smrekar O.
Outlook, closing of workshop
Session 16: Hydrological and limnological perspectives in times of Global Changes
Room G120

Convenors: Petra Schmocker-Fackel, Beat Oertli, Bruno Schädler

Chair: Bruno Schädler

9:00-9:20 Balin D., Schulla J., Lambiel C., Scapozza C., Metzger R., Horton P., Reynard E.
Hydrological modelling under present and future scenarios in two alpine catchments

9:20-9:40 Davin E.L., Seneviratne S.I.
The role of diffuse/direct radiation partitioning in land-atmosphere interactions and terrestrial water cycling

9:40-10:00 Leuzinger S., Körner, C.
Rainfall distribution is the main driver of runoff under future CO₂-concentration in a temperate deciduous forest

10:00-10:20 Magnusson J., Jonas T., Kobierska F., Farinotti D., Zappa M., Bavay M., Bosshard T.
Climate change effects on snow melt and discharge of a partly glacierized watershed in central Switzerland

10:20-11:00 Morning poster session with coffee

Chair: Petra Schmocker

11:00-11:20 Köplin N., Viviroli D., Schädler B., Weingartner R.
Hydrological change in Switzerland: Which catchments are most sensitive? - A comprehensive assessment of climate change impact

Low water in a changing climate

11:40-12:00 Staudinger M., Seibert J., Stahl K., Lehner I.
Towards uncertainty reduction of low flow modeling using ¹⁸O as additional information

12:00-12:45 Lunch

12:45-13:30 General Assembly of the Swiss Society for Hydrology and Limnology

13:30-14:15 Hydrobiology-Limnology Award

Chair: Reinhard Bachofen

Pasche N.
Nährstoffkreisläufe und Methanbildung im Lake Kivu (Ruanda-Kongo)

Zeder M.
Methodenentwicklung zur automatischen Multiparameter-Analyse einzelner Zellen mittels Fluoreszenzmikroskopie

Chair: Beat Oertli

14:15-14:35 Giuliani G., Ray N., Lehmann A.
Modelling global changes impacts on the Black Sea catchment

14:35-14:55 Doering M., Blaurock M., Robinson C.T.
Landscape transformation of an Alpine floodplain influenced by humans: historical analysis from aerial images

The Holocene sediment record of Lake Cadagno: overview and initial results from a comprehensive paleoenvironmental study

15:15-15:40 Afternoon poster session with coffee

Chair: Beat Oertli

15:40-16:00 De Jong R., Kamenik C., Larocque-Tobler I., Grosjean M.
Aquatic organisms as indicators of past climate variability

16:00-16:20 Rosset V, Oertli B.
Freshwater biodiversity under climate warming pressure: identifying the winners and losers in temperate small waterbodies

16:20-16:40 Hines J., Gessner M.
Life-history plasticity in a detritivore determines ecosystem response to climate warming

16:40-17:00 Schilder J., Heiri O., Van Hardenbroek M., Lotter A.
Stable nitrogen isotopes in chitinous remains: exploration of a new palaeoenvironmental proxy for past freshwater environments

Posters of session 16
in front of F130

16.1 Halder J., Decrouy L., Vennemann T.
Hydrodynamics of Lake Geneva inferred from stable H- and O-isotope compositions

16.2 Kauzlaric M., Rey E.
Approaching water stress in the Alps - water management options in the Crans-Montana-Sierre region, Valais (MontanAqua): estimation of available natural water resources

16.3 Rey E., Kauzlaric M.
Approaching water stress in the Alps – water management options in the Crans-Montana-Sierre region, Valais, (MontanAqua): measuring network and influence of land use and land use changes on water balance
Session 17: Groundwater and climate change
Room F130

Convenors: Marc Schürch, Eduard Hoehn, Pascal Turberg

Chair: Marc Schürch

9:00-9:20 Germann P.  Infiltration depths due to increased rain intensities and durations as a consequence of climate change

9:20-9:40 Figura S., Livingstone D., Hoehn E., Kipfer R.  Climate change and groundwater quality: analysis of historical records

9:40-10:00 Hessenauer M., Flury F.  Evolution, sur plus de 20 ans, de quelques paramètres hydrochimiques des eaux souterraines suivies dans le cadre de l’étude d’impact de l’autoroute la Transjurane (A16, Canton du Jura)

10:00-11:00 Morning poster session with coffee + Best Poster Award

Chair: Pascal Turberg

11:00-11:20 Huggenberger P., Butscher C.  Modeling the effects of climate change on the vulnerability of karst groundwater resources

11:20-11:40 Stoll S., Hendricks Franssen Harrie-Jan, Butts M., Kinzelbach W.  Analysis of the impact of climate change on groundwater related hydrological fluxes

11:40-12:00 Tacher L., Turberg P., Breguet A., Parriaux A.  Modeling the sensibility of the alpine and perialpine hydrogeological systems in climate change

12:00-12:20 Chevalier G., Diamond L.W., Leu W.  Potential for deep geological sequestration of CO₂ in Switzerland: a first appraisal

12:20-14:00 Lunch

Posters of session 17
in front of F130

17.1 Alt-Epping P., Diamond L.W.  Reactive-transport modelling applied to geological sequestration of CO₂ in Switzerland

17.2 Akinfiev, N.N., Diamond, L.W.  Thermodynamic model of aqueous CO₂–H₂O–NaCl solutions from 22 to 100 °C and from 0.1 to 100 Mpa

17.3 Diem S., Schirmer M.  RIBACLIM – Riverbank filtration under climate change scenarios

17.4 Käser D., Perrochet P., Renard P., Schirmer M., Zwahlen F., Hunkeler D.  Influence of groundwater/stream water interactions in sustaining environmental flow and water supply in a changing climate: the case of an Alpine alluvial aquifer, the Upper Emme

17.5 Moeck C., Baillieux A., Schirmer M., Hunkeler D.,  Groundwater shortage due to climate change

17.6 Vögeli Albisser C., Prasuhn V.  Irrigation and groundwater quality in times of climate change
Session 18: Troubling water: modes of socialization of a natural resource
Room D230

Convenors: Olivier Ejderyan, Olivier Graefe

10:00-10:45 Morning poster session with coffee
Chair: O. Ejderyan, O. Graefe

10:45-10:50 Ejderyan O., Graefe O. Session introduction


11:05-11:20 Hemund C., Weingartner R., Jorde K. Integrated assessment of the small hydropower potential in Switzerland

11:20-11:35 Schweizer R. Les bisses et leurs modes d’organisation au XXIe siècle, un modèle de gestion durable ?

11:35-11:50 Homewood C. MontanAqua: an assessment of the socio-economic and institutional setting

11:50-12:05 Meyer U. Water and women in rural Amhara: a 'naturalized' connection reflecting a restricting political agenda in Ethiopia

12:05-12:30 Discussion

12:30-14:00 Lunch

Poster of session 18 in front of D230

Session 19: The global/local in our research
Room F130

Convenors: Marina Richter, Patricia Felber

Chair: Patricia Felber

14:00-14:20 Richter M. Jumping scale: dealing with the local and the global in a transnational research project
14:20-14:40 Backhaus N. The local and the global in spatial appropriation
14:40-15:00 Kayani S. Psychosocial effects of natural (cosmic) phenomena: a case study
15:00-15:20 Felber P. Panel discussion

Session 20: Geotopes and geoparks
Room C120

Convenors: Jean-Pierre Berger, Emmanuel Reynard, Pierre-Yves Jeannin, Markus Felber

15:00-15:30 Afternoon poster session with coffee
Chair: J.-P. Berger

15:30-15:50 Martin S. & Ghiraldi L. Static and dynamic mapping of geosites
16:10-16:30 Regolini-Bissig G., Martin S. Quality assessment of natural heritage trails

Poster of session 20 in front of B130

Session 21: Mars: water, climate and geology
Room B130

Convenors: Pierre Brisson, François Zwahlen

Chair: Pierre Brisson

11:00-11:05 Zwahlen F.  Introduction
11:05-11:25 Brisson P. Mars, a remote, now accessible, geologic object
11:25-11:45 Gautsch S. Atomic force microscopy on Mars
11:45-12:05 Hofmann B, Josset M., Josset J.-L. The potential of close-up imaging on the surface of Mars

12:05-13:40 Lunch

Chair: Pierre Brisson

13:40-14:00 Golabek G., Keller T., Gerya T., Zhu G., Tackley P., Connolly J. Core and early crust formation on Mars
14:00-14:20 Frankel C.S. Putative oceans and hydrothermal activity on Mars
14:20-14:40 Gillmann C., Lognonné P. Volatiles in the atmosphere of Mars: the effect of volcanism and escape
14:40-15:00 Bibring J.-P. Mars, water, habitability

15:00-16:00 Coffee break

Chair: Pierre Brisson

16:00-16:20 Josset J.-L. The ExoMars Rover mission, goals and instruments
16:20-16:40 The Marsdreamers One or two sequences of Richard Dindo’s latest documentary
Administrative meeting on Friday, 19th November

11:15-12:30  IUGG Swiss National Committee meeting  Room F130

Administrative meetings on Saturday, 20th November

12:15-13:30  IUGS Swiss National Committee meeting  Room C130
12:15-12:45  Swiss Society for Geomorphology General Assembly  Room C120
12:30-13:30  Generalversammlung «Erlebnis Geologie» / «Géologie Vivante» / «Avventura Geologia»  Room D130
12:45-13:30  General Assembly of the Swiss Society for Hydrology and Limnology  Room G120
13:15-14:00  Administrative Sitzung der Schweizerischen Gesellschaft für Meteorologie (SGM)  Room E140