



Schweizerischer Erdbebedienst
Service Sismologique Suisse
Servizio Sismico Svizzero
Swiss Seismological Service

ETH zürich

Program

14 - 17 March 2017
DAVOS

SCHATZALP
*2nd Induced Seismicity
Workshop*



UP HILL

DER SKI-AUFZUG

**DER SCHWEIZER
SKI-SCHULE DAVOS**

ÜBUNGSFELD

DAVOS PLATZ

„The Magic Mountain“ by Thomas Mann

„And so one day during his second winter up here, Hans Castorp decided he would buy skis and learn how to use them — well enough at least for his practical purposes. He was no athlete, had never been interested in sports, did not pretend he was, the way many Berghof guests did [...] who decked themselves out in sporty outfits to match the spirit of the place. [...]

He happened to speak to Herr Settembrini about his intentions. The Italian almost embraced him for joy. "Why, yes, but of course, my good engineer. For God's sake, do it! Don't ask anyone — just do it. Your guardian angel has been whispering in your ear. Do it at once, before the happy notion deserts you. [...]"

Hans Castorp discovered that you quickly learn a skill if you truly need to. He made no pretense of becoming a virtuoso. What he required to know he learned in a few days, without overheating or having to fight for breath. He worked hard at keeping his feet nicely parallel, leaving a set of even tracks, practiced how to push himself off by steering with his poles, learned to negotiate obstacles, leaping over little mounds with arms widespread, rising and falling like a ship on a stormy sea; and after about the twentieth try he no longer upended when he put on the brakes by executing a telemark turn at full speed, sticking one leg out and bending the other at the knee. [...]

The wintry mountains were beautiful — not in a gentle, benign way, but beautiful like the wild North Sea under a strong west wind. They awakened the same sense of awe — but there was no thunder, only a deathly silence. Hans Castorp's long, pliant footwear bore him in all directions: along the slope on the left in the direction of Clavadel or to the right on past Frauenkirch and Glaris, the shadowy ghost of the Amsel-fluh massif looming up out of the fog behind them; he also skied the valley of the Dischma and the hills rising behind the Berghof, in the direction of the wooded Seehorn, only the very tops of its two snow-clad peaks visible above the tree line, and toward the Drusatscha woods, behind which he could see the pale, murky outline of the Rhätikon chain buried under snow. He even took his skis in the cablecar to the top of Schatzalp to glide about happily up there, abducted into a world of shimmering, powdery slopes, sixty-five hundred feet above sea level, from where in good weather he had a glorious panorama of the scene of his adventures."

Excerpt from „The magic mountain“ by Thomas Mann; published by Alfred A. Knopf; translated by John E. Woods. New York, London, Toronto: Everyman's Library, 1995.

Welcome to Switzerland and Welcome to the 2nd Schatzalp Workshop on Induced Seismicity!

We are delighted that again so many of you decided to invest your precious time into a trip to Switzerland. The fact that more than 160 researchers from around the globe are participating is a strong signal that induced seismicity remains an important topic in many nations.

We tried to put together a program that takes a broad perspective across different disciplines, different countries and different technologies. Learning from the experience of 2015, we slightly fine-tuned it: coffee breaks are longer and the posters are presented in two parts (and with more light). We also opted for a second joint dinner. You will again have to earn it by walking a bit through the snow, but will be rewarded with an outdoor fondue.

A warm thank goes to all individuals and organisations that supported the workshop in numerous ways. Without your contributions, this event would not have been possible!

Finally, we hope you can relax and enjoy the meeting! Your feedback is important to us; it will also help us to decide if we should plan for a Schatzalp Workshop in 2019.

Stefan Wiemer, Toni Kraft, and Anja Tamburini

Tuesday's Program, 14 March

from 16:00 **Registration**

from 18:00 **Ice-breaker** (apéro riche and Swiss music)

from 20:00 **Self-paid dinner** (at Panorama Restaurant, menu for CHF 30)

Wednesday's Program, 15 March

from 07:30 **Installation of posters part 1 and registration**

08:00 **Stefan Wiemer (SED) and Gunter Siddiqi (SFOE)**
Welcome address

Session 1 Case Studies (I)

08:10 **Keynote: Susan E. Hough (USGS)**
Hiding in Plain Sight? Evidence for Possible Induced Earthquakes in California in the Early 20th Century

08:30 **Keynote: William L. Ellsworth (Univ. Stanford)**
The Evolving Earthquake Hazard near Cushing, Oklahoma

08:50 **Keynote: Domenico Giardini (ETHZ)**
Using underground experiments to improve the understanding of induced seismicity

09:10 **Solicited: Mauro Buttinelli (INGV)**
Kinematic inversion of pre-existing faults by wastewater injection-related induced seismicity: the Val d'Agri oil field case study (Italy)

09:25 **Solicited: Patricia Martínez-Garzón (GFZ)**
Geothermal induced seismicity: What links source mechanics and event magnitudes to faulting regime and injection rates?

09:40 **Discussion**

10:00 - 10:30 **Coffee break and posters part 1**

Session 2 Case Studies (II)

10:30 **Keynote: Ernst Huenges (GFZ)**
Soft stimulation and induced seismicity

- 10:50 **Keynote Stefan Wiemer (SED)**
Induced Seismicity in Switzerland: An update and outlook
- 11:10 **Keynote: Annemarie G. Muntendam-Bos (MINEZ)**
The Challenge of Managing Extraction Induced Seismicity in Groningen, The Netherlands
- 11:30 **Keynote: Harsh K. Gupta (NGRI)**
Continued Reservoir Triggered Seismicity at Koyna, India
- 11:50 **Solicited: Jannes Kinscher (INERIS)**
On the variety of post-deformation phenomena in abandoned mining districts: Insights from seismic source analysis
- 12:05 **Discussion**

12:25 - 14:00 **Lunch break**

Session 3 Understanding and Modeling of Induced Seismicity (I)

- 14:00 **Keynote: James Dieterich (Univ. California)**
Application of Large-Scale Earthquake Simulations to Seismicity Induced by fluid injection
- 14:20 **Solicited: Martin Galis (KAUST)**
Two physics-based models for estimation of magnitudes of fluid-injection-induced earthquakes
- 14:35 **Solicited: David Dempsey (Univ. Auckland)**
Applying numerical reservoir modelling concepts to the forecasting of induced seismicity
- 14:50 **Solicited: Dimitrios Karvounis (SED)**
Comparing strategies for stimulating and relieving an EGS reservoir with 3D Monte Carlo simulations
- 15:05 **Keynote: Paul Segall (Univ. Stanford)**
Poroelastic and Earthquake Nucleation Effects in Induced Seismicity
- 15:25 **Solicited: Moritz Ziegler (GFZ)**
Injection induced stress rotations and their effect on induced seismicity
- 15:40 **Discussion**

16:00 - 18:00 **Coffee break and posters part 1**

from 19:00 **Night walk and outdoor Fondue**

Thursday's Program, 16 March

from 07:30 **Installation of posters part 2**

Session 4 Understanding and Modeling of Induced Seismicity (II)

- 08:00 **Keynote: Brice Lecampion (EPFL)**
Potential Sources of Seismicity during the Propagation of a Height Contained Hydraulic Fracture
- 08:20 **Solicited: Hadi Ghofrani (Western Univ.)**
Rates of Induced-Earthquake Activation in Western Canada and Implications for Hazard
- 08:35 **Solicited: Arnaud Mignan (SED)**
The Static Behaviour of Induced Seismicity
- 08:50 **Solicited: Lisa Johann (FU Berlin)**
Scaling of postinjection-induced seismicity – An approach to better understand fluid injection-related processes
- 09:05 **Solicited: Andreas Barth (KIT)**
Statistical distributions of seismicity in the Cooper Basin geothermal field – a way towards predictive models of induced seismicity
- 09:20 **Keynote: Tomas Fischer (Charles Univ.)**
Seismic valve as a driving mechanism of the 2014 aftershock sequences in West Bohemia
- 09:40 **Discussion**

10:00 - 10:30 **Coffee break and posters part 2**

Session 5 Scaled Experiments

- 10:30 **Keynote: Hiroshi Ogasawara (Ritsumeikan Univ.)**
Drilling to probe quasi-static and dynamic seismic ruptures in deep South African gold mines

- 10:50 **Solicited: Joseph Doetsch (SCCER-SoE)**
Induced micro-seismicity observed during meter-scale hydraulic fracturing
- 11:05 **Solicited: Grzegorz Kwiatek (GFZ)**
Insight into subdecimeter fracturing processes during hydraulic fracture experiment in Äspö hard rock laboratory, Sweden
- 11:20 **Solicited: Christophe Nussbaum (swisstopo)**
Aseismic fault slip and leakage preceding an earthquake induced during an in-situ fault reactivation experiment in the Opalinus Clay, Mont Terri rock laboratory, Switzerland
- 11:35 **Solicited: Loes Buijze (TNO)**
Unstable slip events on large-scale experimental faults with variable along-fault lithologies
- 11:50 **Solicited: Paul Selvadurai (SED)**
Direct measurements of asperity evolution in the laboratory relating to fault reactivation in stimulated reservoirs
- 12:05 **Discussion**

12:25 - 14:00 **Lunch break**

Session 6 Monitoring and Analysis of Induced Seismicity (I)

- 14:00 **Keynote: Mark D. Zoback (Univ. Stanford)**
Assessing Potential Magnitudes of Injection-Induced Seismicity on Faults in Crystalline Basement and Overlaying Sedimentary rocks
- 14:20 **Solicited: Tobias Diehl (SED)**
The induced earthquake sequence of St. Gallen, Switzerland: Fault reactivation and fluid interactions imaged by microseismicity
- 14:35 **Solicited: Bettina Goertz-Allmann (NORSAR)**
Interaction between reservoir and basement revealed by CO₂-induced seismicity at Decatur
- 14:50 **Solicited: Martin Schoenball (Univ. Stanford)**
A macroscopic study of the spatio-temporal evolution of induced seismicity on single faults in Oklahoma and Southern Kansas

15:05 **Keynote: Gail M. Atkinson (Western Univ.)**
Assessment and Mitigation of Ground Motion Hazards from Induced Seismicity

15:25 **Solicited: Jean-Robert Grasso (ISterre)**
Long lasting seismicity swarm related to conventional gas production: Lacq gas field, France, 1969-2017

15:40 **Discussion**

16:00 - 18:00 **Coffee break and posters part 2**

from 19:00 **Conference dinner**

Friday's Program, 17 March

from 07:30 **Hotel check-out**

Session 7 **Monitoring and Analysis of Induced Seismicity (II)**

08:30 **Keynote: Stefan Baisch (Q-con GmbH)**
Insights from 75,000 earthquakes induced in the Cooper Basin Enhanced Geothermal System

08:50 **Solicited: Ian Main (Univ. Edinburgh)**
Induced seismicity at the UK 'Hot Dry Rock' test site for geothermal energy production: a new synthesis

09:05 **Solicited: Sergey Turuntaev (Russian Acad. Sci.)**
Discriminating Features of Induced Seismicity in Application to Sakhalin Offshore Hydrocarbon Fields

09:20 **Solicited: David Eaton (Univ. Calgary)**
Dynamics of fault activation by hydraulic fracturing

09:35 **Solicited: Nicholas Deichmann (formerly SED)**
Why M_L and M_W for small earthquakes scale as 1:1.5 instead of 1:1

09:50 **Discussion**

10:10 - 10:40 **Coffee break and hotel check-out**

Session 8 Risk Governance, Societal Acceptance, and License to Operate

- 10:40 **Solicited: Karin van Thienen-Visser (TNO)**
Categorizing seismic risk for the onshore gas fields in the Netherlands
- 10:55 **Solicited: Cornelius Langenbruch (Univ. Stanford)**
How will induced seismicity in Oklahoma respond to decreased saltwater injection rates?
- 11:10 **Keynote: Evelina Trutnevyte (ETHZ)**
Expert agreements and disagreements on induced seismicity by Enhanced Geothermal Systems
- 11:30 **Keynote: Gunter Siddiqi (SFOE)**
Switzerland's support for geothermal energy

11:50 - 12:20 **Final discussion and closure**
Moderator: Stefan Wiemer (SED)

from 12:20 **Lunch and end of the workshop**

List of Posters

Posters part 1 Wednesday, 10:00 - 10:30
Wednesday, 16:00 - 18:00

Posters part 2 Thursday, 10:10 - 10:40
Thursday, 16:00 - 18:00

Posters Part 1, Wednesday

Sessions 1 and 2 Case Studies

- P2-01 Moritz Fehr (Ruhr Univ. and DMT) et al.**
Characterization of near surface effects by Vs estimation using a combined approach and waveform modelling in the area of the natural gas fields in Northern Germany
- P2-02 Paul A. Friberg (ISTI)**
2016 hydraulic fracture induced earthquakes in Ohio
- P2-03 Kwang-II Kim (SNU) et al.**
Induced seismicity protocol for the first Enhanced Geothermal Systems project in Pohang, Korea
- P2-04 Boris Kreike and Giuliana Scuderi (HZ Univ.)**
The effect of induced earthquakes on buried water pipelines. A case study in Groningen, Netherlands
- P2-05 Vincent Maurer (ÉS-Géothermie) et al.**
On-going seismic monitoring of the Rittershoffen and the Soultz EGS projects (Alsace, France)
- P2-06 James P. Verdon (Univ. Bristol) et al.**
Microseismic monitoring of fault re-activation during hydraulic fracturing

Sessions 3 and 4 Understanding and Modeling of Induced Seismicity

- P2-07 G. Abbiati (ETHZ) et al.**
Probabilistic quantification of induced seismic non-structural damage to unreinforced masonry
- P2-08 Alin Chitu (TNO) et al.**
Optimization of operational strategies in producing gas fields mitigating induced seismic risk

- P2-10 Rajdeep Deb and Patrick Jenny (ETHZ)**
Numerical modeling of injection induced shear failure in fractured reservoir using extended finite volume method
- P2-11 Mohammadreza Jalali and Dimitrios Karvounis (ETHZ)**
Thermo-hydro-mechanic-seismicity simulation of Enhanced Geothermal Systems via an adaptive hybrid numerical method
- P2-12 Dimitrios Karvounis (SED) et al.**
Modeling induced seismicity in abandoned enhanced geothermal system
- P2-13 Gareth Maver and Max Werner (Univ. Bristol)**
Adaptively smoothed seismicity models of injection-induced seismicity in Oklahoma and southern Kansas
- P2-14 Cyrill von Planta (USI) et al.**
Massively parallel and scalable solvers for simulating frictional contact on rough Surfaces
- P2-15 Antonio P. Rinaldi (SED) et al.**
Seismicity induced by seasonal variation of reservoir level: the case of Pertusillo lake, Val D'Agri (Italy)
- P2-16 Luca Urpi (SED) et al.**
Potential for induced seismicity from the operation of a deep geological repository
- P2-17 D. Vogler (ETHZ) et al.**
Numerical simulations of hydraulic fracturing during reservoir stimulation at the Grimsel Test Site, Switzerland
- P2-18 Dominik Zbinden (SED) et al.**
Hydro-mechanical modelling of induced seismicity during the deep geothermal project in St. Gallen, Switzerland

Session 5 Scaled Experiments

- P2-09 Mateo Acosta (EPFL) et al.**
Effect of pore pressure on earthquake dynamic rupture: insights from stick slip experiments on granite.
- P1-15 Federico Ciardo and Brice Lecampion (EPFL)**
Modelling of fluid injection into a frictional weakening dilatant fault

- P1-16 Stephan Gehne et al. (Univ. Portsmouth)**
Fluid driven fracture mechanics in highly anisotropic shale: a laboratory study with application to hydraulic fracturing
- P1-17 Bettina Scheu (LMU) et al.**
Insights into the seismic signature of gas-bursts, volcanic explosions and permeable gasflow under controlled laboratory conditions
- P1-18 Matt Wilks (NORSAR) et al.**
Towards distributed acoustic sensing as a viable microseismic monitoring tool: results from the field

Sessions 6 and 7 **Monitoring and Analysis of Induced Seismicity**

- P1-01 Monika Bischoff (LBEG) et al.**
Characteristics of seismicity induced by gas production in Northern Germany
- P1-02 Laura Brown and Marty Hudyma (Laurentian Univ.)**
Differentiating induced and triggered seismic responses to mining
- P1-03 Antony Butcher (Univ. Bristol) et al.**
Local magnitude scales and traffic light schemes
- P1-04 Xiaowei Chen (Univ. Oklahoma) et al.**
Revealing full spectrum of triggering processes in induced seismicity
- P1-05 José Ángel López Comino (GFZ) et al.**
Assessing the monitoring performance and the induced seismicity by hydraulic fracturing at the Wysin site (Poland)
- P1-06 Savka Dineva (Luleå Univ.) and Łukasz Rudziński (PAS)**
Energy magnitude as common magnitude scale for mining induced seismicity
- P1-07 Ladina Glaus (ETHZ) et al.**
Seismic monitoring of deep geothermal energy drilling
- P1-08 Sebastián Gómez Alba and Carlos Vargas Jimenez (UNAL)**
Identifying anthropogenic seismicity in Colombia by evaluating cumulative distribution functions of earthquakes.

- P1-09 Francesco Grigoli (SED) et al.**
Automated microseismic event detection and location algorithms: picking vs waveform based methods
- P1-10 Marcus Herrmann (SED) et al.**
A consistent high-resolution catalog of the induced earthquakes in Basel based on template matching
- P1-11 Eszter Kiraly-Proag (SED) et al.**
Model testing and a new type of ensemble model to better forecast induced seismicity
- P1-12 Konstantinos G. Megalooikonomou (GFZ) et al.**
Towards Performance-Driven Monitoring and Early Warning Systems for Induced Seismicity
- P1-13 Gregor Mokolke (Stuttgart Univ.) et al.**
Recent Seismicity in the Northern German Gas Fields – Induced and Tectonic?
- P1-14 Changpeng Yu (GFZ) et al.**
PCA-based moment tensor inversion of induced earthquakes in The Geysers geothermal reservoir

Posters Part 2, Thursday

Sessions 1 and 2 Case Studies

- P2-01 Jens-Erik Lund Snee (Univ. Stanford) et al.**
Mapping relative principal stresses in the southern United States with application to predicting fault slip potential
- P2-02 Myungsun Kim (KIGAM) et al.**
Induced seismicity during hydraulic stimulation in Pohang (Korea) in comparison to Basel (Switzerland)
- P2-03 Tobias Neuffer and Simon Kremers (DMT)**
Influence of wind turbines on seismic noise at monitoring stations in North Germany
- P2-04 Lluís Saló (UPC) et al.**
Analysis of static stress variations in the 2013 Valencia Gulf (NE Spain) seismic sequence

P2-05 Danijela Sijacic (TNO) et al.
Statistical evidence of production driven seismicity at Groningen Field

P2-06 Zbigniew Zembaty (Opole Univ.) et al.
A procedure to forecast effects of induced seismicity on buildings after an exceptionally strong mine tremor

Sessions 3 and 4 **Understanding and Modeling of Induced Seismicity**

P2-07 Luis Cueto-Felgueroso (MIT) et al.
Stick-slip dynamics of flow-induced seismicity on rate and state faults

P2-10 Giuseppe De Natale (INGV) et al.
Fluid injection and re-injection in deep wells: numerical modelling and implication on induced seismicity

P2-11 Arnaud Mignan (SED)
New horizons in the understanding & mitigation of induced seismicity: physics, risk, communication

P2-12 Bob Paap (TNO) et al.
Simulation of induced seismic ground motions using coupled geomechanical and seismic models

P2-13 Antonio P. Rinaldi (SED) et al.
Modeling of earthquake interaction for induced seismicity

P2-14 Nodar Varamashvili (TSU) et al.
Seismic and mass-movement processes stimulation modeling

P2-15 Brecht Wassing (TNO) et al.
The impact of visco-elastic caprock on fault reactivation and fault rupture in producing gas fields

P2-16 Matthew Weingarten and Mark D. Zoback (Univ. Stanford)
Are we past peak pressure in Oklahoma?

P2-17 Friedemann Wenzel (KIT)
Fluid-Induced Seismicity – Comparison of Rate - and State - and Critical Pressure Theory

P2-18 Dominik Zbinden (SED) et al.
On the physics-based processes behind production-induced seismicity in natural gas fields

Session 5 Scaled Experiments

- P1-12 Bing Q. Li (MIT)**
Microseismic Observations in a Series of Hydraulic Fracture Experiments on Barre Granite
- P1-13 Marco M. Scuderi (Sapienza Univ.) et al.**
The effect of fluid injection on an experimental fault and its role on frictional stability and earthquake triggering
- P1-14 Linus Villiger (SED) et al.**
Micro-seismic monitoring during hydraulic-shearing experiments at the Grimsel Test Site

Sessions 6 and 7 Monitoring and Analysis of Induced Seismicity

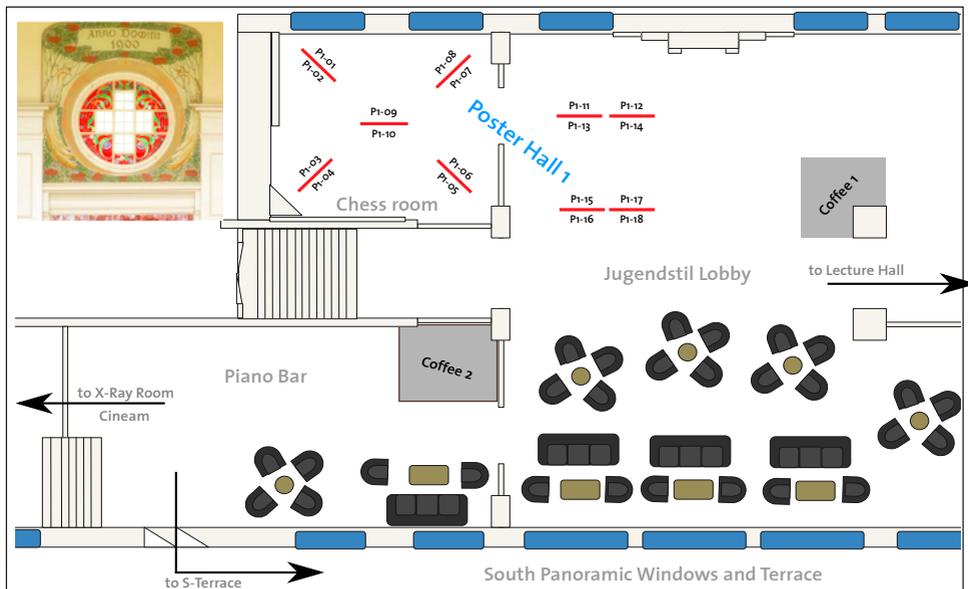
- P1-01 Stephan Bentz (GFZ) et al.**
Earthquake source-type variations at the Salton Sea geothermal field, California
- P1-02 José Ángel López Comino (GFZ) et al.**
Detecting and locating acoustic emissions from hydraulic fracturing experiments at Äspö Hard Rock Laboratory (Sweden)
- P1-03 John Clinton (SED) et al.**
Advanced real-time monitoring for induced seismicity
- P1-04 Francesca De Santis (INERIS) et al.**
Evaluation of Microseismic Array Performances (EMAP): case study of a deep metal mine monitoring network
- P1-05 Francesco Grigoli (SED) et al.**
Automated seismic event location combining waveform stacking based methods with source specific station corrections terms
- P1-06 Luigi Imbrota (INGV) et al.**
Reservoir properties and wastewater induced seismicity at the Val d'Agri oilfield (Italy) shown by 3-D passive seismic tomography
- P1-07 Abror Karimov and Jean-Robert Grasso (ISterre)**
Scaling of seismic response to reservoir impoundment
- P1-08 Dirk Kraaijpoel (TNO)**
Probabilistic assessment of seismic catalogue completeness with application to the Groningen Field

- P1-09 Toni Kraft (SED) et al.**
Induced Seismicity at the geothermal project Schlattingen, CH
- P1-10 Björn Lund (Uppsala Univ.) et al.**
Local event tomography in the Kiirunavaara iron ore mine, Sweden
- P1-11 Volker Oye (NORSAR) et al.**
Constraining location depth of induced seismicity in the complex 3D velocity structure of the Groningen gas field
- P2-08 Elmer Ruigrok (KNMI) et al.**
Current State of the Groningen Seismic Network
- P2-09 Tobias Megies (LMU) et al.**
pyNetOpt3D – A Python API for Monitoring Network Optimization

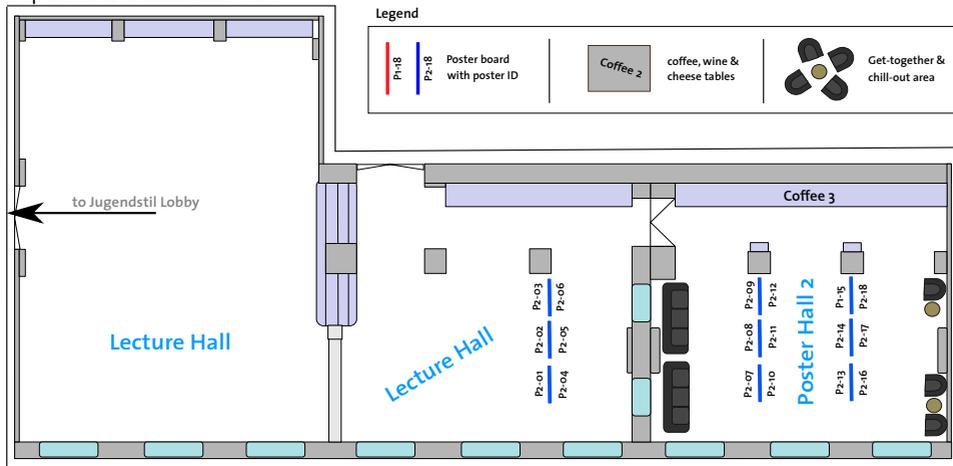
Session 8 Risk Governance, Societal Acceptance, and License to Operate

- P1-15 Sarah Barrett (Swiss Re) et al.**
Induced seismicity by hydrofracking and wastewater disposal: the re/insurance perspective
- P1-16 Marco Broccardo (SCCER-SoE) et al.**
A hierarchical bayesian model for controlling induced seismicity associated with geothermal exploration
- P1-17 Deborah Kane (RMS) et al.**
Quantifying risk due to induced seismicity in Oklahoma and Kansas
- P1-18 Theresa Knoblauch (ETHZ) et al.**
Communicating induced seismicity of deep geothermal energy and shale gas: low-probability high-consequence events and uncertainty

Map of Poster and Lecture Halls



Map of Lecture Hall and Poster Hall 2



List of Participants

Last updated on 13 March 2017

Giuseppe	Abbiati	ETH Zurich
Mateo	Acosta	EPF Lausanne
Petra	Adamová	Institute of Geophysics CAS
Florian	Amann	ETH Zurich, SCCER-SoE
Jean Paul	Ampuero	California Institute of Technology
Gail	Atkinson	University of Western Ontario
Stefan	Baisch	Q-con GmbH
Andrew	Barbour	USGS
Andreas	Barth	Karlsruhe Institut of Technology (KIT)
Lorenzo	Barzaghi	Eni - Exploration
Stephan	Bentz	Ruhr-University Bochum
Falko	Bethmann	Geo-Energie Suisse AG
Monika	Bischoff	Landesamt für Bergbau, Energie und Geologie
Marco	Bohnhoff	GFZ Potsdam
Götz	Bokelmann	Universität Wien
Marco	Broccardo	ETH Zurich, SCCER-SoE
Laura	Brown	Laurentian University
Loes	Buijze	TNO
Sebastian	Busch	Geologischer Dienst NRW
Antony	Butcher	University of Bristol
Mauro	Buttinelli	Istituto Nazionale di Geofisica e Vulcanologia
Enrico	Caffagni	Institut für Meteorologie und Geophysik
Simone	Cesca	GFZ Potsdam
Xiaowei	Chen	University of Oklahoma
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Francesca	De Santis	INERIS
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Nicholas	Deichmann	Swiss Seismological Service
David	Dempsey	University of Auckland
Tobias	Diehl	Swiss Seismological Service
James	Dieterich	University of California
Savka	Dineva	Lulea University of Technology
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Benjamin	Edwards	University of Liverpool
William	Ellsworth	Stanford University
Simona	Esposito	Swiss Re Management Ltd

Moritz	Fehr	DMT Gmbh & Co. KG
Tomas	Fischer	Charles University
Paul	Friberg	ISTI
Ralf	Fritschen	DMT Gmbh & Co. KG
Tànit	Frontera	Institut Cartogràfic i Geològic de Catalunya
Barnaby	Fryer	EPFL Computational Geomechanics Group
Martin	Galis	King Abdullah University of Science and Technology
Stephan	Gehne	University of Portsmouth
Hadi	Ghofrani	Western University
Domenico	Giardini	ETH Zurich
Ladina	Glaus	ETH Zurich, SCCER-SoE
Bettina	Goertz-Allmann	NORSAR
Sebastian	Gomez Alba	National University of Colombia
Pierre	Gouédard	Magnitude
Jean-Robert	Grasso	ISterre, osug, uga
Bastian	Graupner	Swiss Federal Nuclear Safety Inspectorate ENSI
Alan	Green	ETH Zurich
Francesco	Grigoli	Swiss Seismological Service
Laura	Gulia	Swiss Seismological Service
Harsh	Gupta	National Geophysical Research Institute
Bradford	Hager	MIT
Marcus	Herrmann	Swiss Seismological Service
Benjamin	Homuth	HLNUG
Stephen	Horne	Chevron Energy Technology Company
Susan	Hough	U.S. Geological Survey
Ernst	Huenges	GFZ Potsdam
Luigi	Improta	INGV
Roland	Jakob	Swiss Re Management Ltd
Mohammadreza	Jalali	ETH Zurich
Lisa	Johann	Freie Universität Berlin
Andrew	Jupe	altcom Limited
Dimitrios	Karvounis	Swiss Seismological Service
Zhanibek	Katrenov	TengizChevrOil LLP
Myungsun	Kim	KIGAM
Kwang-Il	Kim	Seoul National University
Jannes	Kinscher	INERIS
Eszter	Kiraly-Proag	Swiss Seismological Service
Edi	Kissling	ETH Zurich
Theresa	Knoblauch	Td-Lab, ETH Zürich
Martin	Koller	Résonance Ingénieurs-Conseils SA
Hardik	Kothari	Università della Svizzera Italiana
Dirk	Kraaijpoel	TNO
Toni	Kraft	Swiss Seismological Service
Boris	Kreike	University of Twente
Simon	Kremers	DMT Gmbh & Co. KG
Grzegorz	Kwiatek	GFZ Potsdam
Cornelius	Langenbruch	Stanford University

Jean-Marc	Lavanchy	CSD INGENIEURS SA
Brice	Lecampion	EPF Lausanne
Wolfgang	Lenhardt	Zentralanstalt für Meteorologie und Geodynamik
Bing	Li	Civil and Environmental Engineering MIT
José Ángel	López Comino	GFZ Potsdam
Björn	Lund	Uppsala University
Jens-Erik	Lund Snee	Stanford University
Claudio	Madonna	ETH Zurich
Luca	Magagnini	Ramboll Environ Italy S.r.l.
P. Martin	Mai	King Abdullah University of Science and Technology
Ian	Main	University of Edinburgh
Peter	Malin	Asir
François	Martin	Services Industriels de Genève (SIG)
Patricia	Martínez-Garzón	GFZ Potsdam
Vincent	Maurer	ÉS Géothermie
Konstantinos G.	Megalooikonomou	GFZ Potsdam
Tobias	Megies	LMU Munich
Arnaud	Mignan	Swiss Seismological Service
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