

ECGS – FKPE Workshop

INDUCED SEISMICITY

---- November 15-17, 2010 ----

- SCIENTIFIC PROGRAM -

Sunday November 14

18:30 – 21:00 Icebreaker at the Hilton Hotel

Monday November 15

09:00 – 09:30 Registration, Welcome

Morning session

09:30 – 10:10 Shapiro, S. (**keynote**)

Towards quantifying the seismogenesis of fluid injections in rocks

10:10 – 10:30 Wenzel, F., A. Barth, C. Langenbruch, and S. A. Shapiro

Occurrence probability and earthquake size of post shut-in events in geothermal projects

10:30 – 10:50 Plenkers, K., D. Schorlemmer, G. Kwiatek, and the JAGUARS research group

On the potentials and limitations of a seismic network's sensitivity when monitoring induced seismicity

10:50 – 11:10 Coffee break

11:10 – 11:50 Deichmann, N., and K. F. Evans (**keynote**)

Injection-induced seismicity – lessons learned and open questions

11:50 – 12:10 Kraft, T., N. Deichmann, and K. F. Evans

Detailed imaging of the Basel EGS reservoir – high-precision relocation and focal mechanisms of the induced microseismicity

12:10 – 12:30 Bethmann, F., N. Deichmann, and P. M. Mai
Attenuation measurements from borehole and surface recordings for induced earthquakes in the city of Basel, Switzerland

12:30 – 14:00 Lunch

Afternoon session 1

14:00 – 14:20 Blascheck, P., M. Häge, and M. Joswig
First results of nanoseismic monitoring at geothermal sites

14:20 – 14:40 Mena, B., S. Wiemer, and C. Bachmann
Performance testing of forecasting models developed for induced seismicity due to enhanced geothermal systems

14:40 – 15:00 Schmidt, B., B. Robulic, and J. Ritter
Relationship between reduced injection rates and reduced induced seismicity – 3 years of field data from the commercial geothermal power plant Landau (Germany)

Monday Poster Session

15:00 – 15:30 Poster introductions (3 slides / max. 5 min per poster)

15:30 – 16:30 Poster session and coffee break

Afternoon session 2

16:30 – 17:10 Cuenot, N. (keynote)
Induced microseismic activity at the Soultz-sous-Forêts EGS site: Main scientific results obtained in different experimental conditions

17:10 – 17:30 Calo', M., C. Dorbath, N. Cuenot, F. Cornet, and A. Genter
The contribution of the Local Earthquake Tomography in the EGS geothermal reservoir of Soultz-Sous-Forêts (France) during hydraulic stimulations

17:30 – 18:00 General discussion

Debate 1

18:00 – 19:00 Wording conventions for induced seismicity; Communicating with the public

Tuesday November 16

Morning session

- 09:00 – 09:40 Husen, S., E. Kissling, and A. van Deschwenden (**keynote**)
Induced earthquakes during the construction of the Gotthard basetunnel, Switzerland: Hypocenter locations and source parameters
- 09:40 – 10:00 Contrucci, I., E. Klein, N.-T. Kao, and P. Bigarre
Micro-seismic and leveling monitoring of a solution mining cavern collapse
- 10:00 – 10:20 Bischoff, M., L. Fischer, S. Wehling-Benatelli, R. Fritschen, T. Meier, and W. Friederich
Spatio-temporal characteristics of mining induced seismicity in the eastern Ruhr-area
- 10:20 – 10:40 Kwiatek, G., K. Plenkers, G. Dresen, and the JAGUARS research group
Scaling relations of induced seismicity in picoscale: A case study from Mponeng deep gold mine, South Africa
- 10:40 – 11:00 Coffee break
- 11:00 – 11:40 Fischer, T., A. Guest, and V. Vavryčuk (**keynote**)
Shear and tensile earthquakes caused by fluid injection
- 11:40 – 12:00 Oye, V., H. N. Gharti, D. Kühn, and A. Braathen
Microseismic monitoring of fluid injection at the Longyearbyen CO₂-Lab, Svalbard
- 12:00 – 12:30 General discussion
- 12:30 – 14:00 Lunch

Afternoon session 1

- 14:00 – 14:40 Dahm, T., S. Hainzl, D. Becker, and the DINSeis working group (**keynote**)
How to discriminate induced, triggered and natural seismicity

Debate 2

- 14:40 – 15:30 How to discriminate between natural and induced seismicity?

Tuesday Poster Session

- 15:30 – 16:30 Poster session and coffee break

Afternoon session 2

- 16:30 – 17:10 Dost, B., D. Kraaijpoel, T. van Eck, and F. Goutbeek (**keynote**)
Observing and analyzing seismicity at gas production fields in the Netherlands
- 17:10 – 17:30 Kononov, A. V., and S. B. Turuntaev
Induced seismicity due to hydrocarbon production in the North-Eastern part of Sakhalin island: Weak motion monitoring and further prospects
- 17:30 – 18:30 Presentation of the TAIS (Triggered and Induced Seismicity) working group
- 19:00 Conference dinner

Wednesday November 17

Morning session

- 09:00 – 09:20 Bohnhoff, M., and M. D. Zoback
Oscillation of fluid-filled cracks triggered by degassing of CO₂ due to leakage along wellbores
- 09:20 – 09:40 Turuntaev, S. B., E. I. Eremeeva, and E. V. Zenchenko
Laboratory study of temporal-spatial peculiarities of microseismicity spreading due to pore pressure change
- 09:40 – 10:00 Groos, J., and J. R. R. Ritter
Seismic noise: A challenge and opportunity for seismological monitoring in densely populated areas
- 10:00 – 10:40 General discussion
- 10:40 – 11:00 Coffee break
- 11:00 – 11:40 Joswig, M. (**keynote**)
Recent alternatives in seismic monitoring of geothermal sites

Debate 3

- 11:40 – 12:30 Which new techniques and technologies can we expect in the future?
- 12:30 – 14:00 Closing remarks and lunch
- 14:00 – Departure of participants

Posters

1. Akopian, S. Ts., and E. A. Popov
Monitoring induced seismicity based on seismic entropy method
2. Braun, T., J. Heinicke, and T. Dahm
The difficulty to distinguish natural and human related seismicity in a complex tectonically active area
3. Lindenfeld, M., G. Rümpker, and M. Kracht
Microseismic monitoring: A proposed study in the Upper Rhinegraben and experiences from the East African Rift System
4. Moldoveanu, T., K.-P. Bonjer, and M. Pecingine
Aspects concerning seismicity analyses of the Vidraru – Arges (Romania) dam area
5. Plenefisch, T., U. Wegler, M. Keyser, and E. Wetzig
Monitoring of microseismic activity around the GenSys deep geothermal drilling site, Hannover (Germany)
6. Turuntaev, S. B., and O. Yu. Melchaeva
Non-linear analysis of seismic regime response to electromagnetic powerful source actions
7. Wegler, U., and C. Bönnemann
Project MAGS – Microseismic Activity of Geothermal Reservoirs
8. Zahran, H. M., Sy. El-Hadidy, and Kh. Yosef
Recent earthquake activity at Haradh region, western Saudi Arabia
9. Godey, S., and R. Bossu
How to better discard non tectonic events from seismicity catalogues?
- 10./11./12. FKPE working group posters