

SCCER SoE Annual Conference 2019

Programme

Hydropower and Geo-Energy in Switzerland: Challenges and Perspectives

3 & 4 September 2019

Lausanne (VD), École polytechnique fédérale de Lausanne EPFL



The SCCER-SoE Annual Conference 2019 presents insights into our research highlights, puts a strong emphasis on the project posters, and offers many opportunities for personal exchange.

We will start the first day with the status of the energy law implementation and the current state of work in the SCCER-SoE. The afternoon is dedicated to highlights of the future supply of energy regarding risk, social acceptance, global observation and energy system simulation and modelling.

On the second day, two sessions for hydropower and geo-energy will run in parallel. The sessions have the same objectives: In the morning, we will focus on the research highlights and in the afternoon, we will meet with stakeholders and customers for knowledge and technology transfer workshops.

Supported by:



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Innosuisse – Swiss Innovation Agency

Tuesday, 3 September 2019

11:15	Registration and Coffee
12:00	Welcome Address (Andreas Mortensen, EPFL). Room: CO 2 (plenum)
12:05	Session 1: Introduction Chair: François Avellan, EPFL Room: CO 2 (plenum)
12:05	Energy Research at EPFL (Mario Paolone, EPFL)
12:25	Status of the Energy Law Implementation (Wolfgang Elsenbast, SFOE)
12:45	Status of the SCCER-SoE (Domenico Giardini, ETHZ)
13:05	Lunch and Poster Session
15:00	Session 2: Highlights from WP 4 Future Supply of Energy Chair: Peter Burgherr, PSI Room: CO 2 (plenum)
15:00	Accident Risk Assessment for Hydropower and Deep Geothermal Energy Systems (Matteo Spada, PSI)
15:20	Induced Seismicity Risk: its Governance Involving Scientists, Authorities and the Public (Arnaud Mignan, ETHZ and Olivier Ejderyan, ETHZ)
15:40	The Contribution of the Swiss Mountains to the Energy Turnaround with New Renewables (Michael Lehning, EPFL)
16:00	Missing Perspectives in Swiss Electricity Supply Models and Scenarios (Evelina Trutnevyte, UNIGE)
16:20	Implications of European Climate and Energy Policy for the Swiss Power Sector (Anthony Patt, ETHZ)
16:40	Scenarios for 2050: the Role of Hydropower and Geoenergies (Gianfranco Guidati, ETHZ)
17:00	Aperitif and Dinner

Wednesday, 4 September 2019

8:15	Registration and Coffee
9:00	Session 3a: Highlights from Geo-Energy Research Chairs: Rolf Krause, USI, and Andrea Moscariello, UNIGE Room: CO 2
9:00	Numerical Simulation and Uncertainty Quantification for Reservoir Engineering (Rolf Krause, USI)
9:15	Scenario Modeling for High Temperature Underground Heat Storage (Thomas Driesner, ETHZ)
9:30	High Performance Computing Based Assessment of Hydraulic Stimulation (Maria Nestola, USI)
9:45	Hydromechanical Coupling in Heterogeneous and Fractured Media (Marco Favino, USI)
10:00	Using a THMC Simulator to Examine the Effects of Porosity Reduction on Pore Pressure Development in Geothermal Reservoirs (Batoul Gisler, UNINE)
10:15	Coffee and Poster Session <i>Session 3a – Continued on Next Page</i>
	Session 3b: Highlights from Hydropower Research Chair: Robert Boes, ETHZ Room: ELA 1
9:00	Four Years of Sediment Transport Measurements in the Albula River Upstreams of the Hydropower Dam Solis (Dieter Rickenmann, WSL)
9:15	Change in Run-Of-River Power Production Calculated with the New Climate Change Scenarios CH2018 (Tobias Wechsler, WSL)
9:30	H2020 XFLEX Project (François Avellan, EPFL)
9:45	Dam Heightening Options in Switzerland to Increase Hydro Storage Capacity and Winter Production (Michelle Müller-Hagmann, ETHZ, tbc)
10:00	Reach-Scale Effects of Small Hydropower Plants (Katharina Lange, EAWAG)
10:20	Coffee and Poster Session <i>Session 3b – Continued on Next Page</i>

Session 3a – Continued		Session 3b – Continued	
10:35	Geophysical Characterization of Fractured Rocks – a Rock Physics Perspective (Eva Gaspari, Uni Leoben)	10:40	Fish Protection and Downstream Migration at Low-Head Hydropower Plants (Julian Meister, ETHZ)
10:50	The Gasometer-based CO ₂ Plume Geothermal Energy Storage System (Benjamin Adams, ETHZ)	11:00	Climate Change Effects on Flood Risk at Dam Sites (Nadav Peleg, ETHZ)
11:05	Revised Potential of the Muschelkalk Formation (Central Swiss Plateau) for CO ₂ Storage and Geothermal Energy (Larryn Diamond, UNIBE)	11:15	Balancing Hydropower Production and Environment Through Flexible Operation (Paolo Burlando, ETHZ, tbc)
11:20	CO ₂ Sequestration within the ELEGANCY-ACT Project: Progress of the CS-D Experiment on Faulted Rock in Mont Terri (Melchior Grab, ETHZ)	11:30	SmallFLEX – Demonstrator for Flexible Small Hydropower Plants (Cécile Münch-Alligné, HES-SO)
11:35	Influence of Reservoir Geology on Seismic Response During Decameter Scale Hydraulic Stimulations in Crystalline Rock (Linus Villiger, ETHZ)	11:45	Renovhydro: How Synergies Between Utilities can Provide Flexibility and Hydropeaking Mitigation. Case Study of Upper Rhône Valley (Christophe Nicolet, Powervision Engineering)
11:50	Bedretto Underground Laboratory for Geoenergies: Ongoing Activities and Future Opportunities (Marian Hertrich, ETHZ)		
12:00	Lunch and Poster Session		
13:50	Poster Award. Room: CO 2 (plenum)		
14:00	Session 4a *: Knowledge and Technology Transfer for Geoenergies Chair: Gianfranco Guidati, ETHZ Room: CO 2	14:00	Session 4b *: Knowledge and Technology Transfer for Hydropower Chair: Pedro Manso, EPFL Room: ELA 1
14:00	Funding Opportunities Post-2020 – A Chance to Transfer Knowledge Into Practice (Gunter Siddiqi, FOEN)	14:00	Welcome (Anton Schleiss, EPFL, and Pedro Manso, EPFL)
14:15	Solution for Shallow Geothermal Energy Exploitation: From Building Integration to Lifetime Management (Benoît Cousin, EPFL)	14:10	Why Swiss Hydropower Needs Flexibility: The Hydropower Producer's View (tbd, KWO)
14:30	HEATSTORE: Aquifer Thermal Energy Storage in Switzerland (Luca Guglielmetti, UNIGE, Carole Nawratil de Bono, SIG, Peter Meier, GeoEnergie Suisse, Thomas Driesner, ETHZ, Larryn Diamond, UNIBE, and Benoît Valley, UNINE)	14:25	Research Challenges of Flexible Hydropower Generation (Robert Boes, ETHZ)
15:15	Coffee and Poster Session	14:35	P1 Hydropeaking Mitigation (Philipp Meier, MeteoSwiss)
15:35	Long-Term Monitoring of Geothermal Energy Reservoirs (Joseph Moerschell, HES-SO)	14:50	P2 Impulse Wave Risk Management in Mountainous Reservoirs (Frederic Evers, ETHZ)
15:50	Corrosion Analysis of Deep Geothermal Fluids in Switzerland (Ana Vallejo Vialler, ETHZ)	15:05	Coffee and Poster Session
16:05	Existing and Upcoming swisstopo Products Supporting the Geothermal Development (Christian Minnig, swisstopo)	15:25	P3 Opportunities for Future Hydropower Storage Identified by Data Mining from Multi-Decadal Past Behaviours (José Pedro Matos, Stucky)
16:20	Discussion: What Can Academia Do to Help the Geothermal Industry? (All)	15:40	P4 Innovative Sediment Management for a Cascade of Alpine Reservoirs (Samuel Vorlet, EPFL)
16:50	Closure (Gianfranco Guidati, ETHZ)	15:55	P5 Fine Sediment Management Considering Turbine Erosion (David Felix, ETHZ)
		16:10	P6 Preventing Turbine Instability During Multiple Start/Stop Procedures (Jean Decaix, HES-SO, and Vlad Hasmatuchi, HES-SO)
		16:25	Final Word from Industrial Partner (tbd, KWO)
		16:35	Discussion (All)
		16:50	Closure (Pedro Manso, EPFL)

* The talks of these sessions will be held in German or French and will simultaneously be translated into the other language.

Registration

Personal registration is required.

1. Go to [this website](#) and create a user account.
2. Register your participation until 20 August 2019.
Entrance is free.

Poster registration is required.

1. Log in to [this website](#) with your user account.
2. Register your poster until 20 August 2019. *
3. Upload the pdf file of your poster until 4 September 2019. *

* You can edit the data of your poster (title etc.) and the pdf file at any time until 4 September 2019.

Call for Posters

Academic research partners are required to present their project on a poster.

Formatting instructions:

- A0 size, vertical / portrait format only
- If a project is funded by the SCCER-SoE, the authors are required to use this [poster template](#).

The top three posters made by PhD students and scientific assistants will be awarded. Please note that scientific assistants need to be younger than 29.

Accommodation

If required, accommodation needs to be arranged independently and in accordance with the expense regulations of the institutions. There are numerous [accommodation options in Lausanne](#) and the surrounding area. Some hotels may offer discounts if you use code EPFL when booking.

The following hotel offers rooms at a special discounted rate on a first-come-first-served basis:

- [Hotel Aulac](#), book on website with code: SCCER-SoE

Location

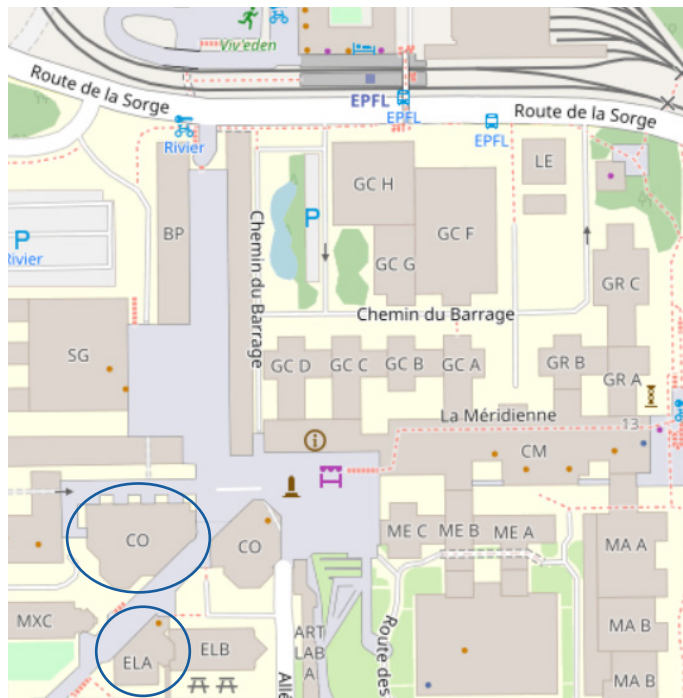
[École polytechnique fédérale de Lausanne EPFL](#)

Rooms [CO 2](#) and [ELA 1](#)

1007 Lausanne

Next public transport station:

[Ecublens VD, EPFL](#) (metro, bus) via Lausanne or Renens



Deadlines

Personal and poster registration: 20 August 2019

Poster upload: 4 September 2019

Contact

Ueli Wieland

ETH Zurich

Sonneggstrasse 5

8092 Zurich

E-Mail: uwieland@retired.ethz.ch

Cooperation Partners



Academic Research Partners

