



# 3<sup>rd</sup> International Conference on Coupled Processes in Fractured Geological Media: Observation, Modeling and Application

## Invitation

The Conference on Coupled Processes in Fractured Geological Media: Observation, Modeling, and Application (CouFrac2022) invites you to Berkeley, California, November 14-16, 2022. The conference, which succeeds the first one held in Wuhan, China in 2018 and the second held in Seoul, Korea in 2020, will focus on new and exciting advances in all areas of coupled processes associated with fractured geological media, including numerical methods, in-situ tests, lab experiments, machine learning, and applications to different subsurface engineering activities. The conference will be held in person in Berkeley with the possibility of participation through video conferencing. We look forward to your participation!

## Conference Chairs

- Jonny Rutqvist (LBNL, USA)
- Mengsu Hu (LBNL, USA)
- Carl I. Steefel (LBNL, USA)
- Ki-Bok Min (SNU, Korea)
- Antonio Pio Rinaldi (ETH Zürich, Switzerland)
- Pengzhi Pan (CAS, China)
- Hideaki Yasuhara (Ehime University, Japan)

## Conference Administrator

Shelby Bemiss (LBNL, USA)

## Student Assistant

Ying Xin (SNU, Korea)

## Conference email:

[coufrac2022@gmail.com](mailto:coufrac2022@gmail.com)

## Conference website:

<http://www.coufrac2022.org>

## Important Dates

October 1, Deadline for Early Registration  
November 1, Deadline for Regular Registration

## CouFrac 2022 Awards

Best Oral Presentation and Poster Awards

## ISRM THMC Commission Award

Chin-Fu Tsang Coupled Processes Award

## Panel Discussion: Carbon Neutrality



## Honorary Panel Members:

Derek Elsworth, Ranjith Pathegama Gamage, Dongxiao Zhang, Maurice B Dusseault, Hajime Yamamoto

## Keynote Lectures



Chin-Fu Tsang



Mark D. Zoback



Wenlu Zhu



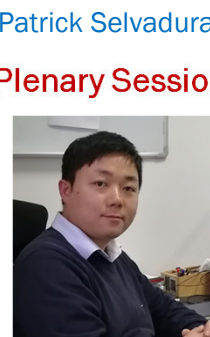
Patrick Selvadurai



Jishan Liu



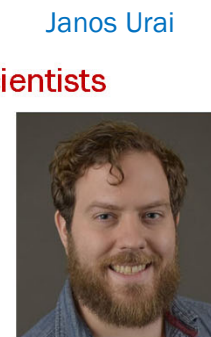
Janos Urai



Xuhai Tang



Anna Suzuki



Harrison Lisabeth



Cyprien Soullaine



Luke Frash



Sehyeok Park

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### Special Sessions

**SS1: Machine learning for coupled processes in the earth sciences and engineering**

Conveners: Mengsu Hu, Laura J. Pyrak-Nolte

### Sessions

**S1: Multi-physics of high-enthalpy and supercritical geothermal systems**

Conveners: Francesco Parisio, Keita Yoshioka

**S2: Fracture propagation modeling in porous media**

Conveners: Keita Yoshioka, Francesco Parisio

**S3: THMC coupling in geologic CO<sub>2</sub> storage: from lab to field scale**

Conveners: Roman Makhnenko, Víctor Vilarrasa

**S4: Soft stimulation in enhanced geothermal system**

Conveners: Zhihong Zhao, Bo Li

**S5: Fostering geological hydrogen storage: Experiments, simulations, field observations**

Conveners: Pania Newell

**S6: Induced seismicity: from understanding the triggering mechanisms to its forecasting**

Conveners: Víctor Vilarrasa, Roman Makhnenko

**S7: Fusing data-driven and physics-based modeling in Enhanced Geothermal Systems**

Conveners: Thomas Poulet, Manolis Veveakis

**S8: Numerical modelling of long term THM coupled processes in fractured hard rock**

Conveners: Diego Mas Ivars

**S9: Coupled THM hard rock fracture behaviour- laboratory experiments and numerical modelling**

Conveners: Diego Mas Ivars

**S10: Coupled THM field experiments in fractured hard rock**

Conveners: Diego Mas Ivars

**S11: Laboratory evaluation of shear behavior of rock fractures from micro to macro scale**

Conveners: Li Zhuang, Fengshou Zhang, Bo Li

**S12: Exploring the THM processes via geophysical parameters: from laboratory experiments to field tests**

Conveners: Takuya Ishibashi, Yusuke Mukuhira, Sho Ogata

**S13: Hydraulic fracturing in deep oil/gas reservoirs with complex geologic discontinuities**

Conveners: Xuhai Tang, Haiyan Zhu

### Sessions

**S14: Controlled enhanced geothermal system (EGS) development**

Conveners: Hannes Hofmann, Günter Zimmermann

**S15: Hydromechanical interactions and seismic hazards in mineral resources exploitation**

Conveners: Wenzhuo Cao, Qinghua Lei

**S16: THM processes in thermal and gas storage in geological formations**

Conveners: Hejuan Liu, Pengzhi Pan, Zhaofeng Wang

**S17: Advances in hydraulic fracture modeling and applications**

Conveners: Fengshou Zhang, Egor Dontsov

**S18: Multi-scale and multiphysics coupled processes in dynamics of geological discontinuities and application to subsurface energy storage and waste disposal**

Conveners: Kyung Won Chang, Jeoung Seok Yoon

**S19: Mechanical effects on fluid flow and contaminant transport in rock fractures**

Conveners: Liangchao Zou, Jan-Olof Selroos

**S20: Numerical modelling of coupled thermo-hydro-mechanical processes in fractured rocks**

Conveners: Bruno Figueiredo, Jeffrey Hyman

**S21: Numerical modelling of the interaction of coupled thermo-hydro-mechanical processes and complex geological settings and heterogeneities**

Conveners: Bruno Figueiredo, Jeffrey Hyman

**S22: Coupled thermal, hydrological, mechanical and chemical (THMC) in engineered barrier system and the host rock for high-level radioactive waste repositories**

Conveners: LianGe Zheng, Jonny Rutqvist

**S23: Coupled processes in the Earth's critical zone**

Conveners: Qinghua Lei, Carl Steefel

**S24: The role of fracture evolution in fluid and solute migration and leakage**

Conveners: Sergi Molins

**S25: Understanding flow paths and coupled processes in rock salt**

Conveners: Laura Blanco-Martin

**S26: Fluid and solute transfers in clay-rich fractured media**

Conveners: Christophe Tournassat, Roman Makhnenko, Thomas Gimmi



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