

Sunday, 20 September 2026

Short Courses	
09:30-11:30	FracMan Short Course
13:00-15:00	CSMP++ Short Course
15:30-17:30	AE Sensing Short Course
Registration	
17:00-18:00	Registration
Reception (Chair: Qinghua Lei)	
18:00-18:30	Keynote Speaker: Chin-Fu Tsang
18:30-20:00	Welcome Reception

Monday, 21 September 2026

Welcome and Opening Ceremony (Chair: Jonny Rutqvist)				
08:30-08:45	Welcome Address: Jonny Rutqvist Opening Remarks: Qinghua Lei			
08:45-08:50	Group Photo			
Keynote Presentation (Chair: Ki-Bok Min)				
08:50-09:35	Keynote Speaker: Emmanuel Detournay			
09:35-09:50	Coffee break			
Parallel Sessions	A-1: Fracture Propagation and Damage - Part 1	B-1: Reactive Transport	C-1: Coupled Processes in Rock Fractures - Part 1	D-1: AI for Coupled Processes
Session Chairs	Kazuhei Aoyagi Chenxi Zhao	Sergi Molins Cyprien Soullaine	Liangchao Zou Lei Wang	Xuhai Tang Pengzhi Pan
09:50-10:05	98121 A. Chehreh	98225 M. Zamzami	98301 J. Lin	98464 Z. Teng
10:05-10:20	98178 K. Yoshioka	98215 Y. Nam	98148 M. Murad	98390 R. Wang
10:20-10:35	98438 J. Xu	98409 K. Yamashita	98497 A. Berntsen	98157 S. Kim
10:35-10:50	98216 A. Sarma	98471 C. Tournassat	98427 S. Ren	98633 J. Qiao
10:50-11:05	98399 B. Wu	98472 L. Wegner	98310 Z. Liu	98400 A. Saad
Keynote Presentation (Chair: Hideaki Yasuhara)				
11:15-12:00	Keynote Speaker: Francois Renard			
12:00-13:00	Lunch			
Panel Discussion (Chair: Carl Steefel)				
13:00-14:00	Eric Gaucher, Mengsu Hu, Florian Osselin, Dirk Smit			
Parallel Sessions	A-2: Coupled Processes in Geological H2 Generation	B-2: Fracture Network Modeling - Part 1	C-2: Coupled Processes in Underground Excavation	D-2: Induced Seismicity - Part 1
Session Chairs	Carl Steefel Roman Makhnenko	Maria Klepikova Jiangmei Qiao	Andrés Alcolea Yuedu Chen	Inga Berre Fengshou Zhang
14:10-14:25	98212 Q. Gasser	102813 S. Matthai	98200 A. Kumar	98156 W. Pan
14:25-14:40	98503 Q. Hu	98811 R. Brauchler	98302 J. Lin	98405 X. Zhu
14:40-14:55	98819 X. Tang	98387 C. Jiang	98355 H. Karimzadeh	98092 N. Yang
14:55-15:10	98513 R. Okoroafor	98569 R. Habibi	98125 M. Naveen	98139 W. Lin
15:10-15:25	98379 M. Hu	98709 J. Kim	98108 Z. Zhang	98487 S. Glubkovskikh
15:25-15:40	Coffee break			
Parallel Sessions	A-3: Coupled Processes in Geological H2/CO2 Storage - Part 1	B-3: Coupled Processes in Nuclear Waste Disposal - Part 1	C-3: Experimental Studies of Coupled Processes from Lab to Field Scale - Part 1	D-3: Chemo-Mechanical Processes
Session Chairs	Laura Blanco-Martín Xianda Shen	Andrew Frampton Zhihong Zhao	Rui Wu Antonio Pio Rinaldi	Xiaoguang Wang Chuanyin Jiang
15:40-15:55	98526 P. Guo	98172 L. Yu	98191 Y. Dong	98186 S. Zhou
15:55-16:10	98175 F. Chen	98402 J. Rutqvist	98142 D. Bashyal	98230 C. Cheng
16:10-16:25	96392 Y. Jia	98478 P. Trinchero	98096 T. Cajuhi	98506 Q. Hu
16:25-16:40	98389 H. Wu	98420 M. Andiva	107476 I. Vaezi	98339 F. Huang
16:40-16:55	98352 H. Habbani	98581 M. Sedighi	98205 M. Vu	98433 C. Jiang
Poster Session				
17:00-18:00	Poster (core time)			
Evening Event				
18:10-19:30	COMSOL Workshop			

Tuesday, 22 September 2026

Keynote Presentation (Chair: Carl Steefel)				
08:30-09:15	Keynote Speaker: Eva Schill			
Parallel Sessions	A-4: Coupled Processes in Geological H2/CO2 Storage - Part 2	B-4: Coupled Processes in Rock Fractures - Part 2	C-4: Induced Seismicity - Part 2	D-4: Coupled Processes in Geothermal Systems - Part 1
Session Chairs	Víctor Vilarrasa Chaozhong Qin	Li Zhuang Paolo Trinchero	Ki-Bok Min Zhijun Wu	Ingrid Tomac Mohammadreza Jalali
09:20-09:35	98479 M. Mura	98224 J. Sanglas	96040 I. Vaezi	96297 D. Tsujino
09:35-09:50	98366 Y. Chen	98192 I. Stefansson	98081 D. Jiang	98161 Y. Liu
09:50-10:05	97461 J. Bang	98724 P. Blum	98431 M. Hu	98177 X. Wang
10:05-10:20	98143 D. Bücken	98635 K. Kim	98388 H. Wu	98162 K. Yang
10:20-10:35	98115 D. Zbinden	98515 L. Zou	98541 W. Zhao	97315 M. Sweeney
10:35-10:50	101530 E. Saffou	98512 L. Jacobsson	98404 H. Wang	98123 L. Ringel
10:50-11:05	98181 X. Yan	102486 J. Zhou	98333 I. Kivi	98514 M. Wu
11:05-11:20	Coffee break			
Chin-Fu Tsang Award Ceremony & Award Lecture (Chair: Jonny Rutqvist)				
11:20-11:30	Introduction of Awardee (Chin-Fu Tsang)			
11:30-12:00	Award Lecture (Wenzhuo Cao)			
12:00-13:00	Lunch			
Keynote Presentation (Chair: Yvonne Tsang)				
13:00-13:45	Keynote Speaker: Ju Wang			
Parallel Sessions	A-5: Coupled Processes in Nuclear Waste Disposal - Part 2	B-5: Induced Seismicity - Part 3	C-5: Experimental Studies of Coupled Processes from Lab to Field Scale - Part 2	D-5: Fracture Propagation and Damage - Part 2
Session Chairs	Ju Wang Bo Li	Chongyuan Zhang Jihoon Kim	Iman Vaezi Paul Antony Selvadurai	Sho Ogata Wenzhuo Cao
14:00-14:15	98198 M. Souley	98083 D. Jiang	96232 R. Wu	98174 X. Tang
14:15-14:30	98500 M. Hokr	98688 Y. Wang	98473 J. Stebel	98365 W. Bangchen
14:30-14:45	98450 Y. Wang	102403 L. Hibbard	98502 K. Komal	107475 T. Cheng
14:45-15:00	98328 J. Yoon	98152 L. Zhang	98501 Q. Hu	97483 L. Wang
15:00-15:15	98407 A. Pont	98325 H. Zhang	98367 Y. Chen	98341 Y. Yang
15:15-15:30	98498 M. Kröhn	98091 Y. Ji	98312 M. Waqar	98117 B. Ullah
15:30-15:45	98135 C. Morel	98475 M. Jalali	98505 R. Wolters-Zhao	100606 Z. Chen
15:45-16:00	Coffee break			
Parallel Sessions	A-6: Fracture Network Modeling - Part 2	B-6: Coupled Processes in Geothermal Systems - Part 2	C-6: Induced Seismicity - Part 4	D-6: Coupled Processes in Geological H2/CO2 Storage - Part 3
Session Chairs	Weiguo Liang Baehyun Min Bruno Figueiredo	Manolis Veveakis Jinhyun Choo	Mengyi Li Yusuke Mukuhira	Chaojie Cheng Kyung-Won Chang
16:00-16:15	98195 F. Tiedtke	98063 L. Pyrak-Nolte	98299 M. Sabah	98160 A. Vafaie
16:15-16:30	98393 M. Andiva	97756 C. Lagardère	98441 Z. Chongyuan	98106 D. Sciandra
16:30-16:45	98263 G. Pichot	98381 K. Khaledi	97808 S. Zhang	98403 M. Cao
16:45-17:00	98554 P. Davy	98168 J. Kim	96015 L. Kleijbeuker	97433 K. Adisornsupawat
17:00-17:15	98151 L. Zhang	98064 D. Nolte	98189 W. Pan	102016 L. Hou
17:15-17:30	98150 J. Barroso	98141 R. Takemura	98537 H. Wu	98507 A. Ehteshami
17:30-17:45	98204 D. Roberts	98188 E. Jahangir	104504 P. Maneepong	98180 M. Nuus
17:45-18:00				
Banquet Dinner (Chair: Iman Vaezi)				
19:00-22:00	Banquet Dinner (Uppsala Castle)			

Wednesday, 23 September 2026

Keynote Presentation (Chair: Jonny Rutqvist)				
08:30-09:15	Keynote Speaker: Ruben Juanes			
Parallel Sessions	A-7: Fracture Network Modeling - Part 3	B-7: Coupled Processes in Nuclear Waste Disposal - Part 3	C-7: Coupled Processes in Geothermal Systems - Part 3	D-7: Fracture Propagation and Damage - Part 3
Session Chairs	Jeffrey Hyman Hyun Chul Yoon	Christophe Tournassat Jan-Olof Selroos	Diego Mas Ivars Yinlin Ji	Keita Yoshioka Kazuki Sawayama
09:20-09:35	98477 C. Darcel	98336 C. Sun	98136 G. Toussaint	98492 T. Li
09:35-09:50	98187 K. Khezri	98509 M. Bjorge	98169 H. Wu	98419 F. Körner
09:50-10:05	98137 P. Pereira	98171 M. Li	98417 X. Tian	98071 Y. Mukuhira
10:05-10:20	98154 I. Chikura	98128 K. Mosley	98159 R. Kalanji	96749 R. Cui
10:20-10:35	98145 K. Ishitsuka	97658 Y. Wu	98350 M. Mollaali	98363 C. Zhao
10:35-10:50	98134 Y. Xiao	98430 K. Aoyagi	98504 K. Aboyanah	98321 J. Shao
10:50-11:05	98131 E. Toller	98485 S. Sandoval	98385 M. Klepikova	98429 R. Wada
11:05-11:20	Coffee break			
Keynote Presentation (Chair: Auli Niemi)				
11:20-12:05	Keynote Speaker: Hemi Koyi			
12:05-13:15	Lunch			
Emerging Scientists Session (Chair: Christophe Tournassat & Qinghua Lei)				
13:15-13:45	Jenna Poonosamy			
13:45-14:15	Junlong Shang			
14:15-14:45	Kazuki Sawayama			
14:45-15:15	Coffee break			
15:15-15:45	Xiaoguang Wang			
15:45-16:15	Hafssa Tounsi			
16:15-16:45	Kim Kwang-II			
Closing Ceremony (Chair: Chuanyin Jiang)				
17:00-17:15	Announcement of Best Presentation and Poster Awards (Jonny Rutqvist)			
17:15-17:20	Closing remarks: Chuanyin Jiang			

Detailed Oral Presentation Programme

Monday, 21 September 2026

Slot 1 (09:50-11:05)

A-1: Fracture Propagation and Damage - Part 1 — Chairs: Kazuhei Aoyagi; Chenxi Zhao

98121. Armin Chehreh — Numerical simulation of physical breakdown – validation of the phase field approach as basis for numerical upscaling of rock mass deformation
98178. Keita Yoshioka — CO₂ induced fracture modeling by a phase-field approach under non-isothermal conditions
98438. Jun Xu — Influence of pore connectivity pattern and skeleton directionality on fracture propagation in coral reef limestone: An X-ray CT-based numerical study
98216. Antareep Kumar Sarma — Hydroshearing versus tensile hydraulic fracturing during fluid injection in fractured rocks
98399. Bisheng Wu — A hydraulic fracturing model simulating transport and bridging of lost circulation materials in wellbore strengthening

B-1: Reactive Transport — Chairs: Sergi Molins; Cyprien Soulaïne

98225. Maryam Zamzami — Hydro-Geochemical Modeling of Cement Grout Degradation in a Partially Filled Rock Fracture
98215. Yeeun Nam — Temperature-dependent fluid density and viscosity control fracture flow and transport
98409. Kei Yamashita — Applicability of Geochemical modeling for Rock Grouting Process by ‘Concretion-Forming Resin’
98471. Christophe Tournassat — A multiscale reactive transport modeling approach for clay-rich environments
98472. Lara Wegner — Mineralization in variably saturated porous media and its consequential changes on effective diffusivity

C-1: Coupled Processes in Rock Fractures - Part 1 — Chairs: Liangchao Zou; Lei Wang

98301. Jia-Jing Lin — Modeling Coupled Thermo-Hydro-Mechanical Processes in Fractured Porous Media under Freeze-Thaw Conditions
98148. Marcio Murad — A Two-Scale Non-Equilibrium Relative Permeability Model for Transient Two-Phase Flow in Fractured Rocks
98497. Andreas Nicolas Berntsen — Reducing permeability of fractured chalk using lost circulation material
98427. Sentao Ren — Correlation between equivalent gas aperture and normal stiffness in rock fractures
98310. Zaobao Liu — Hydro-mechanical coupling effects on shear strength and permeability evolution of granite in high stress true triaxial direct shear-seepage experiment

D-1: AI for Coupled Processes — Chairs: Xuhai Tang; Pengzhi Pan

98464. Zheng Teng — Generative direct inversion of 2D discrete fracture networks based on conditional diffusion models
98390. Rushan Wang — From Borehole Images to Fracture Growth: Data-Driven Analysis of Long-Term In-Situ Experimental Observations
98157. Sejin Kim — Separable Physics-Informed Neural Networks with Fixed-Stress Splitting for GREAT Cell Hydro-Mechanical Benchmarks in Intact and Fractured Rock
98633. Jiangmei Qiao — Reconstructing 3D digital rocks of meteorites via 2D microscale mechanical experiments and SliceGAN
98400. Ahmed Saad — Data-Driven Reconstruction of Shear Sonic Slowness for Improved Reservoir Characterization

Slot 2 (14:10-15:25)

A-2: Coupled Processes in Geological H₂ Generation — Chairs: Carl Steefel; Roman Makhnenko

98212. Quentin Gasser — Deep groundwater flow dynamics in the Engadine valley (SE Switzerland): insights from hydrodynamic modelling with implication for H₂ production
98503. Qinhong Hu — Experimental studies of H₂ and CO₂ in representative geological formations: Gas diffusion and influencing factors
98819. Xuhai Tang — Generating H₂ during the CO₂ sequestration in olivine
98513. Rita Esuru Okoroafor — Flow-Through Fracture Experiments and Multiscale THC Modeling of Stimulated Geological Hydrogen Generation
98379. Mengsu Hu — Chemo-mechanical Controls on H₂ Generation in Ultramafic rocks

B-2: Fracture Network Modeling - Part 1 — Chairs: Maria Klepikova; Jiangmei Qiao

102813. Stephan Matthai — Fluid Inertia, Flow dynamics, Fluid Rheology in Natural Fracture Networks

98811. Ralf Brauchler — Characterization of the induced fracture network around galleries using a time laps pressure tomography approach and mechanical stress modelling

98387. Chuanyin Jiang — Fracture Trace-Constrained Conditional Simulation for 3D Fracture Network Extrapolation: Application to Nuclear Waste Repository Development

98569. Rahim Habibi — Discrete Fracture Network Modeling Based on Borehole Image Log: Case Study of the GeoLaB

98709. Jineon Kim — High-fidelity site-specific calibration of genetic discrete fracture networks to fracture trace maps

C-2: Coupled Processes in Underground Excavation — Chairs: Andrés Alcolea; Yuedu Chen

98200. Ankesh Kumar — Thermal Shock-Induced Damage and Its Influence on Tunnel Deformation and Plastic Zone Evolution

98302. Jia-Jing Lin — Influence of Pre-existing Fractures on Freeze-Thaw Dynamics around Rock Tunnels

98355. Hadi Karimzadeh — Detailed Hydro-Mechanical Modelling of Tunneling-Induced Ground Settlement in Layered Stratigraphy: A Case Study of the West Link Project, Sweden

98125. M Naveen — Numerical Analysis of Freeze-Thaw Effects on the Structural Integrity of Fibre-Reinforced Concrete

98108. Zixin Zhang — Long-term Performance of High-speed Railway Tunnels under Dynamic Train Loading: What is the role of Surrounding Rock Mass?

D-2: Induced Seismicity - Part 1 — Chairs: Inga Berre; Fengshou Zhang

98156. Wenbo Pan — Multiscale Modeling of Earthquake-induced Seismo-Mechanical Responses in Fractured Rock Masses around Tunnels

98405. Xinjie Zhu — Normal stress oscillation-induced slip characteristics of faults: effects of oscillation frequencies and cycles

98092. Ning Yang — Controls of quiescent healing on fault nucleation during injection-induced reactivation

98139. Weiren Lin — Temperature Measurements and Long-term Observations in a 700-m-deep Vertical Borehole Penetrating the Futagawa Fault

98487. Stanislav Glubokovskikh — Downhole-based Strain for Fluid-Induced Rupture Characterization: Experience at San Andreas and Mont Terri in-situ Laboratories

Slot 3 (15:40-16:55)

A-3: Coupled Processes in Geological H₂/CO₂ Storage - Part 1 — Chairs: Laura Blanco-Martín; Xianda Shen

98526. Pengyu Guo — Application of creep-fatigue constitutive model based on state variables in long-term deformation of salt cavern

98175. Fei Chen — Effects of secondary fractures on fault activation and hydrogen leakage during cyclic underground hydrogen storage

96392. Yunzhong Jia — Dual effects of sulfur dioxide impurities on pore network modification and permeability in high-rank anthracite during carbon sequestration

98389. Haiqing Wu — Buoyancy effects on hydro-mechanical coupling processes and site stability during and after large-scale CO₂ injection into porous media

98352. Hajar Habbani — Cohesive-zone based assessment of thermally induced fracture propagation in rock salt: a 2D benchmark relevant to rapid H₂ cycling in salt caverns.

B-3: Coupled Processes in Nuclear Waste Disposal - Part 1 — Chairs: Andrew Frampton; Zhihong Zhao

98172. Long Yu — Experimental and Numerical Investigation of Thermally Induced Fracture Closure and Permeability Evolution in Fractured Beishan Granite

98402. Jonny Rutqvist — Assessing Thermal-Mechanical Damage to Nuclear Waste Repositories in Crystalline Rock Formations: A Case Study of Forsmark and Olkiluoto

98478. Paolo Trinchero — Modeling Anion Exclusion in Fracture-Matrix Systems with Fully Coupled Multicomponent Nernst-Planck Transport

98420. Muhammad Raharsya Andiva — 3D Modelling of Time-Dependent Coupled Hydro-Mechanical Processes in Faulted Opalinus Clay Shale

98581. Majid Sedighi — Analysis of Porewater Chemistry in Compacted Bentonite through Capillary Geochemistry Theory

C-3: Experimental Studies of Coupled Processes from Lab to Field Scale - Part 1 — Chairs: Rui Wu; Antonio Pio Rinaldi

98191. Yanhui Dong — Unveiling Far-field Hydro-Mechanical Responses in Deep Shaft Excavation: Insights from DTS and Multi-Level Monitoring at Beishan URL

98142. Durga Prasad Bashyal — Analysis of Poisson's ratio anisotropy of foliated rocks of Central Nepal

98096. Tuanny Cajuhi — From Observation to Prediction: Hydro-Mechanical Modeling of Desiccation Cracking in the Mont Terri Rock Laboratory

107476. Iman Vaezi — Reinterpreting hydraulic tests in fractures embedded in low-permeability rock

98205. Minh Ngoc Vu — Heating induced water flux into an opening within Callovo-Oxfordian claystone formation: the case of EPT experiment in Meuse/Haute-Marne URL

D-3: Chemo-Mechanical Processes — Chairs: Xiaoguang Wang; Chuanyin Jiang

98186. Sihan Zhou — Acidic Environment Enhances Hydro-Shearing in Carbonate Reservoirs

98230. Chaojie Cheng — Time-dependent evolution of hydraulic and mechanical fracture apertures mediated by fluid-rock interactions

98506. Qinrong Hu — Coupled THMC processes of laminated clay-rich media at different observational scales

98339. Fuyun Huang — A coupled 3-D THMC framework for pressure solution and cementation in explicitly resolved rough fractures

98433. Chuanyin Jiang — Stress-driven Dissolution Dynamics in Fracture Networks under Stress Loading

Tuesday, 22 September 2026

Slot 4 (09:20-11:05)

A-4: Coupled Processes in Geological H₂/CO₂ Storage - Part 2 — Chairs: Víctor Vilarrasa; Chaozhong Qin

98479. Miki Mura — Temperature–Pressure–Phase Controls on CO₂ Injectivity and Thermo-Mechanical Operating Limits

98366. Yuedu Chen — Hydro-mechanical-chemical behavior of fractured coal during supercritical CO₂ injection

97461. Jeong-Uk Bang — Hydro-Mechanical Coupled Response of Caprock During Hydrogen Breakthrough Measurements

98143. Daniel Bücken — Numerical and laboratory impact assessment of subsurface thermo-mechanical energy storage

98115. Dominik Zbinden — The pioneering CO₂ test injection in Switzerland (project CITru): insights from multiphase hydromechanical numerical modeling

101530. Eric Saffou — A one-way coupled geomechanical model for CO₂ storage in faulted depleted gas reservoirs

98181. Xiao Yan — Effect of Phase Change of CO₂ on Injection-Induced Fault Slip in Granite

B-4: Coupled Processes in Rock Fractures - Part 2 — Chairs: Li Zhuang; Paolo Trinchero

98224. Jordi Sanglas — Analysis of heterogeneous fracture aperture fields caused by normal stress and shear displacement

98192. Ivar Stefansson — Numerical simulation of shear-induced fracture wear in thermoporomechanical media

98724. Philipp Blum — Fracture permeability evolution under normal and shear stresses

98635. Kiseok Kim — Permeability evolution in clay-rich mudrocks during shear-induced fracturing and mineral precipitation

98515. Liangchao Zou — Predicting direct shear of crystalline rock fractures under the constant normal stiffness condition

98512. Lars Jacobsson — Hydraulic transmissivity measurements of an undisturbed and opened rock joint under varying normal load

102486. Jia-Qing Zhou — Can we detect rock ruptures via naturally occurring nuclide signals?

C-4: Induced Seismicity - Part 2 — Chairs: Ki-Bok Min; Zhijun Wu

96040. Iman Vaezi — Effects of fracture length distribution and network connectivity on injection-induced seismicity

98081. Danyang Jiang — Hydro-mechanical model of complex fault system at the Bedretto Underground Laboratory

98431. Minghui Hu — Effects of cyclic shear stress perturbations on shear strength degradation and slip behavior of faults

98388. Haiqing Wu — Stochastic poromechanical analysis unravels the exceedance probability of the 2017 Pohang, South Korea, Mw 5.5 earthquake

98541. Wenzhi Zhao — Thermal rate-and-state friction framework for dynamic fault slip

98404. Hualin Wang — Numerical modeling of injection-induced poromechanical stress variations in a reservoir with anisotropic viscoelastic-viscoplastic constitutive law

98333. Iman R. Kivi — Limitation of bleed-off to mitigate post-injection seismicity in enhanced geothermal systems

D-4: Coupled Processes in Geothermal Systems - Part 1 — Chairs: Ingrid Tomac; Mohammadreza Jalali

96297. Daisuke Tsujino — Development of a coupled thermal-hydraulic-mechanical-chemical simulator for describing rock fracture opening/sealing under geothermal conditions

98161. Yongzan Liu — Hydraulic Connectivity Controls Circulation-Induced Seismicity in an EGS Doublet: Insights from Coupled Thermal-Hydraulic-Mechanical Modeling

98177. Xiaoguang Wang — Thermo-hydro-mechanical modeling of induced seismicity in enhanced geothermal systems: effects of thermal stress and slip weakening
98162. Kuan Yang — Coupled thermal-hydraulic-mechanical modeling of crosswell distributed fiber-optic strain and temperature responses during fracturing in EGS
97315. Matthew Sweeney — Advancing Predictive THMC Models for Supercritical Geothermal Energy
98123. Lisa Maria Ringel — Characterizing heat transport at T-intersections of fractures with dead-ends
98514. Ming Wu — A grain-based mixed phase-field method for simulating thermo-mechanical fracture in heterogeneous brittle granite

Slot 5 (14:00-15:45)

A-5: Coupled Processes in Nuclear Waste Disposal - Part 2 — Chairs: Ju Wang; Bo Li

98198. Mountaka Souley — Hydromechanical modelling of damaged zone around underground storage facilities
98500. Milan Hokr — Predicting Stress-Controlled Fracture Transmissivity: A Model–Experiment Benchmark Study
98450. Yumeng Wang — Reactive transport modeling of radium transport and co-precipitation in fractured crystalline rocks
98328. Jeoung Seok Yoon — Discrete element modelling of fault dynamic rupture and coseismic displacement of discrete fractures – Application to Forsmark SNF repository
98407. Arnau Pont — Numerical modelling of mass losses from compacted sodium montmorillonite due to extrusion and erosion within narrow fractures
98498. Michael Kröhn — Flow and Tracer Transport in 3D-Printed Replicas of Natural Fractures
98135. Carlos Guevara Morel — Influence of fractures on the hydraulic behavior around a generic repository system in crystalline rock

B-5: Induced Seismicity - Part 3 — Chairs: Chongyuan Zhang; Jihoon Kim

98083. Danyang Jiang — Volume-based rate and state friction law
98688. Yuhan Wang — Modelling Cross-scale Fault Rupture Dynamics considering Thermo-Poro-Mechanical-Chemical (THMC) Processes and Fluid-Fault Interactions
102403. Leon Hibbard — Designing and Interpreting an Earthquake: Hydraulics and Hydromechanics
98152. Le Zhang — Global sensitivity analysis of heat production and induced seismic moment in fractured geothermal reservoirs
98325. Hao Zhang — Induced Seismicity Governed by Hydraulic Shearing of Pre-existing Fractures during Reservoir Stimulation in Gonghe EGS, Northwestern China
98091. Yinlin Ji — Decoupling of hydraulic and seismic responses to repeated geothermal stimulations supported by statistics and deep learning
98475. Mohammadreza Jalali — From Decimeters to Decameters: A Multi-Scale Investigation of Fluid-Induced Fault Reactivation

C-5: Experimental Studies of Coupled Processes from Lab to Field Scale - Part 2 — Chairs: Iman Vaezi; Paul Antony Selvadurai

96232. Rui Wu — Moisture-induced weakening with microcrack growth accelerates brittle creep in clastic rocks
98473. Jan Stebel — Hydro-mechanical modelling of excavation experiment in URF Bukov
98502. Komal Komal — Impact of Produced Water from Petroleum Reservoir on the Tensile Strength of Different Lithologies from Indian Reservoir
98501. Qinzhong Hu — Micro-scale studies of petrographic, petrophysical, geochemical and mechanical properties of laminated clay-rich media
98367. Yuedu Chen — Experimental study on gas seepage and heat convection characteristics during shear slip of high-temperature sandstone fractures
98312. Muhammad Faisal Waqar — Influence of Mineralogical and Petrographic Properties on the Mechanical Behavior of Granitic and Mafic Rocks
98505. Ralf Wolters-Zhao — TH2M-coupled simulation and lab investigation of pressure-driven infiltration/percolation in rock salt with inhomogeneous and anisotropic behaviour

D-5: Fracture Propagation and Damage - Part 2 — Chairs: Sho Ogata; Wenzhuo Cao

98174. Xiaojie Tang — A Chemo-Hydro-Mechanical Model for Acidic Fluid Pressurization in Reactive Rocks
98365. Wu Bangchen — Mechanisms of Hydraulic Fracture Propagation and Reorientation: A Decameter-Scale Field Experiment with Excavation Validation
107475. Tai Cheng — Effects of structural planes on tunnel rockburst: Insights from published cases

97483. Liang Wang — Progressive failure and sinkhole formation above salt caverns: Insights from particle finite element simulations

98341. Yuehui Yang — Downhole flowmeter constraints on reopening pressure and minimum horizontal stress in hydraulic fracturing stress measurements

98117. Barkat Ullah — Investigation of Freeze-Thaw Induced Fracture Characteristics in Porous Rocks

100606. Zechao Chen — Phase-Field Simulation of Coupled Thermo-Hydro-Mechanical Fracture Processes in Multiphase Geomaterials

Slot 6 (16:00-18:00)

A-6: Fracture Network Modeling - Part 2 — Chairs: Weiguo Liang; Baehyun Min; Bruno Figueiredo

98195. Friederike Tiedtke — A DFN-DEM modelling approach to simulate fractured rock under glacial conditions

98393. Muhammad Raharsya Andiva — Modelling Coupled Hydro-Mechanical Responses in 3D Unsaturated Fractured Rock Masses

98263. Géraldine Pichot — The spectral domain decomposition method GenEO as a robust preconditioner for single-phase flow in fractured porous media

98554. Philippe Davy — Progress in Genetic Models for Fracture Network Generation: Incorporating Elastic Energy and Friction

98151. Le Zhang — Sensitivity guided surrogate assisted Bayesian inference of fracture network parameters from elastic waves

98150. Josue Barroso — Graph-Based Hydro-Mechanical Upscaling of Permeability in Fractured Media

98204. Dan Roberts — The Importance of Scale in applications of Discrete Fracture Network Models: an Example Involving the Proportion of Open Fractures

B-6: Coupled Processes in Geothermal Systems - Part 2 — Chairs: Manolis Veveakis; Jinhyun Choo

98063. Laura Pyrak-Nolte — Connectivity through Fracture Intersections

97756. Carla Lagardère — From fossil to active systems: fluid circulation in fault-controlled high-temperature geothermal fields (Larderello and Elba Island)

98381. Kavan Khaledi — GeoHEAT-Upscaling: A GPR-assisted permeability upscaling approach for fractured geothermal reservoirs

98168. Jihoon Kim — Coupled Hysteretic Multiphase Flow and Geomechanics for CO₂ Storage in a Faulted System: A Thermodynamically Consistent Modeling Approach

98064. David Nolte — Seismic and Electrical Projection Tomography of an Enhanced Geothermal System by Continuous State Monitoring During Flow Stimulation

98141. Ryota Takemura — Fourier Neural Operator Surrogate Model for Robust and Fast Modeling of Coupled Processes in Geothermal Reservoirs

98188. Emad Jahangir — Effective stress driven fracture network in deep geothermal application

C-6: Induced Seismicity - Part 4 — Chairs: Mengyi Li; Yusuke Mukuhira

98299. Mohammad Sabah — A Fully Coupled Poroviscoelasto-Dynamic Extended Finite Element Framework for Injection-Induced Seismicity in Fractured Geothermal Reservoirs

98441. Zhang Chongyuan — Permeability evolution and seismic behavior of granite EGS hydraulic stimulation: A comparative study of single or double-hole injection experiment

97808. Supeng Zhang — Learning and forecasting injectivity and seismicity across stages from physics-consistent stimulation at Utah FORGE

96015. Laurens Kleijbeuker — Quantifying Reservoir Permeability from Induced Seismicity in Geothermal Systems

98189. Wenbo Pan — Seismo-Mechanical Modeling of Earthquake Triggering and Aftershock Sequences in Fractured Geological Media

98537. Haiqing Wu — Poroelastic effects on the nucleation process of injection-induced dynamic fault rupture

104504. Phopthorn Maneepong — Coupled hydromechanical modeling of mine water rebound-induced seismicity at the Gardanne Mine, France

D-6: Coupled Processes in Geological H₂/CO₂ Storage - Part 3 — Chairs: Chaojie Cheng; Kyung-Won Chang

98160. Atefeh Vafaie — Predicting dissolution patterns during CO₂ storage: the role of reactivity persistence and reaction-front movement

98106. Dario Sciandra — Inferring effective flow properties in geological carbon storage: a combined physics-based and machine learning approach

98403. Meng Cao — Influence of Stress Redistribution on Fault Rupture Patterns and CO₂ Sequestration in Layered Sedimentary Basins

97433. Kanitthorn Adisornsupawat — Laboratory–Numerical Investigation of Fault Reactivation Under CO₂ Exposure

102016. Lei Hou — Physics-constrained Fourier neural operator for prediction of carbon dioxide plume migration and pressure propagation in heterogeneous saline aquifers

98507. Amir Ehteshami — Tightness behaviour of annulus cementation in gas storage caverns repurposed for hydrogen storage: experimental and numerical insights

98180. Matthijs Nuus — Hydromechanical Reactivation, CO₂ Migration, and Seal Integrity in a Caprock Fault: Modeling the in situ FS-C Experiment using TOUGH-FLAC

Wednesday, 23 September 2026

Slot 7 (09:20-11:05)

A-7: Fracture Network Modeling - Part 3 — Chairs: Jeffrey Hyman; Hyun Chul Yoon

98477. Caroline Darcel — Factoring stress dependency into the permeability of sparsely fractured rocks

98187. Khashayar Khezri — Performance Comparison of Equivalent Fracture Layer and Discrete Fracture Network Models

98137. Patricia Pereira — Numerical Upscaling of Non-Neighboring Transmissibilities for Enlarged Fractures in a Hybrid DPDP / EDFM Framework

98154. Ippei Chikura — Toward Scale-Aware and Accelerated Reactive Transport in Fractured Rock

98145. Kazuya Ishitsuka — Modeling and characterization of flow properties in three-dimensional fracture networks by graph-based neural operators

98134. Yanqiu (Miranda) Xiao — Constraining Discrete Fracture Network (DFN) Model with Borehole Flow Logs

98131. Erik Toller — Getting rid of the mesh in DFN modeling

B-7: Coupled Processes in Nuclear Waste Disposal - Part 3 — Chairs: Christophe Tournassat; Jan-Olof Selroos

98336. Changlun Sun — Comparative laboratory investigation on slip stability of saw-cut and rough granite fractures during mechanical shear and thermoshearing

98509. Merle Bjorge — Influence of seismic uncertainty on safety assessments for deep geological disposal of radioactive waste

98171. Muzi Li — Laboratory experimental study on thermoshearing behavior of fractured granite in Beishan URL

98128. Kyle Mosley — Numerical modelling of coupled THMC processes in fractured repository host rocks using a Dual-Media paradigm

97658. Yang Wu — Numerical study on radionuclide migration in the far-field geological barrier of a disposal repository under coupled thermo-hydro-mechanical condition

98430. Kazuhei Aoyagi — Significance of Hydro-Mechanical Coupling Analysis for the Evaluation of Tunnel Stability in Mudstone

98485. Sebastián Sandoval — Numerical Sensitivity Analysis of Coupled HM Behavior in Triaxial Tests on Argillaceous Rocks

C-7: Coupled Processes in Geothermal Systems - Part 3 — Chairs: Diego Mas Ivars; Yinlin Ji

98136. Gaëlle Toussaint — A numerical framework to investigate coupled processes and induced seismicity in Enhanced Geothermal Systems

98169. Hui Wu — THMC coupled modeling of heat extraction from enhanced geothermal systems and implications for flow channeling management

98417. Xiao Tian — Fracture geometry and rupture mechanisms control permeability evolution in crust

98159. Rugesh Kalanji — Thermal-Shock Effects on the Thermo-Hydro-Mechanical (THM) Response of Horizontal Cylindrical Wellbores in Hot Dry Rock

98350. Mostafa Mollaali — Thermo-hydro-chemical reactive flow in rough fractures: temperature-dependent PHREEQC coupling in OpenGeoSys

98504. Kareem Aboyanah — Experimental and Numerical Investigation of Fault Reactivation and Fracturing in Enhanced Geothermal Systems

98385. Maria Klepikova — A new tool for exploring advective–diffusive heat transport in heterogeneous three-dimensional fracture networks

D-7: Fracture Propagation and Damage - Part 3 — Chairs: Keita Yoshioka; Kazuki Sawayama

98492. Tianjiao Li — Simulation of Fracture Propagation and Gas-Water Competitive Mechanisms Based on Multiscale Digital Rock Reconstruction

98419. Feline Körner — From Laboratory Extension Tests to Cavern-Scale Modeling: Fracture Processes in Rock Salt under THM Exposure
98071. Yusuke Mukuhira — Shear-Thickening-Fluid Fracturing Experiments on Unconventional Reservoir Rocks: Basalt and Shale
96749. Ronghao Cui — Near-tip sampling strategies for fracture stress intensity factors in the multi-point stress approximation
98363. Chenxi Zhao — Multiscale hydromechanical modeling of time-dependent creep damage in brittle rocks
98321. Jianfu Shao — Modeling of mixed cracks in porous media with coupled finite element and peridynamics method
98429. Ryu Wada — Numerical Simulation on Mechanism Analysis of Rock Fracturing with Shear Thickening Fluid

Detailed Poster Presentation Programme

Monday, 21 September 2026

Poster Session (17:00-18:00)

101884. Anna-Maria Eckel — Hydro-Mechanical Reservoir Simulation of Cyclic Hydrogen Storage in a Fault-Bounded Saline Aquifer
102034. Mushfiqullah Sapay — Coupled Hydro-Mechanical Fracture Behavior in Saturated Concrete: Investigating the Influence of Free Water on Dynamic Tensile Response via DIC-VFM
102036. Xiao-Long Wu — Insights into Dense Non-Aqueous Phase Liquid Dynamics in A Single Synthetic Sheared Rock Fracture
103982. Zheng Yang — Grain-scale heterogeneity controls rock cutting and fragmentation under confining stress
104541. Abir Hasan Bhuiyan — Persistent magmatic depth segmentation of fluid- and stress-induced earthquake swarms
96505. Mohsen Bazargan — Tectonic and Magmatic Coupling in the Erzincan Basin and Karlova Triple Junction: Insights from Seismic Tomography and Numerical Modeling
98095. Wenbo Hou — A Non-Isothermal Phase-Field Fracture Model for Modeling Thermal Shock and Fracturing in Porous Medias
98104. Ruili Ji — Integrated hydraulic and DTS-based tracer characterization of meter-scale water conductive structures at mileage of 2034m at Beishan URL
98120. Chunping Wang — Experimental study on seepage-creep coupling characteristics of granite damaged by drilling and blasting excavation
98155. Cathryn Sebastian — A peridynamic framework for modeling pore pressure redistribution under controlled source–sink configurations
98163. Yongzan Liu — Investigation of heat recovery and distributed-temperature responses during water circulation in an EGS double-horizontal-well system
98170. Po Kai Chen — Excavation-induced changes in hydraulic conductivity anisotropy of fracture sets and preferential flow zones
98176. Hyun Chul Yoon — Coupled Processes with Residual Gas Saturations Calculation in Various Subsurface Systems
98185. Dan Roberts — Coupled modelling workflows for carbon storage sites and addressing structural complexity
98193. Yatharth Mittal — Thermo-hydro-mechanical stability of the salt caverns for underground hydrogen storage (UHS)
98203. Mandy Duda — Time will tell - a microstructural story of time-dependent rock failure
98206. Peter Alt-Epping — Coupled thermal-hydraulic-chemical simulations of fractured subsurface systems
98307. Mohammad Nooraiepour — Coupled Hydro-Mechanical-Chemical Processes in Geological Carbon Storage: From Nucleation Dynamics to Reservoir-Scale Integrity
98317. Lie Kong — Effects of Grain-Scale Variability in Mineralised Fractures on Shear Failure and Damage Evolution
98324. Timotej Verbovšek — Correlations between geochemical properties of groundwaters and hydraulic properties of fractures and matrix in Slovenian dolomites
98330. Yanlei Dong — Prediction of shale fractures in Sha-4 Member in Niuzhuang Depression, Dongying Sag
98334. Iman R. Kivi — Near real-time machine-learning forecasting of injection-induced seismicity in enhanced geothermal systems
98354. Hadi Karimzadeh — Hydro-Mechanical Modelling of Tunneling-Induced Ground Settlement Controlled by Bedrock Fault and Frictional Layer in Composite Soil–Rock Systems
98359. Chuanyin Jiang — Role of Fault Spacing in Injection-Induced Fault Reactivation and Inter-Fault Stress Transfer
98424. Jingbo Zhao — Inverse modeling of parameterized hydraulic conductivity field in fractured rock mass for geological disposal of high-level radioactive waste in China
98426. Junlong Shang — Experimental Investigation of Hydro-Mechanically Driven Fracture Slip in Veined Rocks
98428. Zhen Peng — Geochemical Stability of Gneiss for Underground Hydrogen Storage in Unlined Rock Caverns
98443. Zhang Chongyuan — Effects of stress path and stress state on injection-induced fault reactivation: An experimental study
98446. Gao Zixuan — Indirect-injection-induced fault reactivation under heat treatment cooling conditions: Implications for EGS
98449. Sarah Perkams — Statistical Analysis of Fracture Network Properties Across Varying Depths for Discrete Fracture Network Characterization

98454. Sobhan Sheikhi — Shear-Driven Preferential Flow Paths in a Rough Fractures: A Radial Shear-Flow Setup for Coupled Hydro–Chemo–Mechanical Experiments
98480. Gaëlle Toussaint — Modeling thermodynamics of co-seismic decarbonation as a driver for aftershock sequences
98493. Xintao Zhou — Observation and Investigation of Hydraulic Fracture Propagation in Rock under Different Stress Conditions
98496. Xiaotian Wu — Fracture aperture evolution and heat extraction evaluation in enhanced geothermal systems based on a THMC coupling model
98499. Yutong Gui — Long-term hydro-chemo-mechanical coupling induced by SREMA leaching in fractured sandstone
98518. Jubier Alonso Jimenez Camargo — Development of Microfractures in Rock Salt Under Unconfined and Confined Mechanical Load and Hydrogen Permeation Assessed by X-ray Computed Tomography
98560. Qi Zhang — Core disposal elements spacing design for high-level radioactive waste repository under coupled thermo-hydro-mechanical condition