UNESCO - IGCP 636

Annual Meeting Geothermal Workshop 2026

INRS, Room 2403-05, Québec City, June 2-5

Event description

The international research group IGCP 636, under the UNESCO International Geoscience Programme, will hold its annual meeting at INRS in Québec City during a 4-day geothermal workshop from June 2 to 5, 2026. The workshop is open to all (registration required).

This workshop will bring together researchers, students, and industry professionals from different countries to foster scientific exchange, technical skill development, and knowledge sharing in geothermal energy.

The program includes a COMSOL numerical modeling workshop, training on Thermal Response Tests (TRT), technical presentations, and field activities. These activities aim to strengthen capacities in subsurface thermal characterization and geothermal system modeling.

Participation details

Workshop is now booked. Participation was free of charge and open to all, but space was limited to 30 participants.

Lunches and coffee breaks on Days 1, 2, and 3, as well as transportation between INRS downtown and the field activity locations on Days 2 and 4, will be provided by the IGCP 636 group. Please refer to the daily schedule for additional details.

About IGCP 636

The IGCP 636 project builds upon the previous IGCP initiative (2016–2019), which successfully promoted international collaboration to advance geothermal energy development across the Americas and Europe.

The project aligns with the United Nations 2030 Agenda for Sustainable Development, particularly Goal #7, which promotes increasing the share of renewable energy in the global energy mix and strengthening international cooperation to improve access to clean energy technologies.

IGCP 636 aims to promote the sustainable use of natural resources while engaging local authorities, civil society, and other stakeholders. The project emphasizes co-designing strategies adapted to local needs and fostering the development of green skills in geosciences and geothermal energy.

Research areas

- **Deep geothermal resources:** High and medium enthalpy systems.
- **Shallow geothermal energy:** Low enthalpy systems.
- **Education:** Training and outreach in geosciences and geothermal energy.

WORKSHOP PROGRAM

Day 1 (Tuesday, June 2): COMSOL numerical modelling workshop.

https://INRS.zoom.us/j/84553417435

Time	*Activity*	*Description*	*Presenter*
8:30		Welcome (INRS downtown, Room 2403-05)	
8:45	**Welcome Remarks and Workshop Opening**	Opening remarks and official opening of the IGCP 636 Annual Meeting and Geothermal Workshop.	Daniela Blessent (Universidad de Medellín)
9:00	**Introduction to COMSOL Multiphysics**	Global description of the software and its capabilities for subsurface flow and heat transfer modeling.	Andrzej Bielecki (COMSOL)
10:00		Coffee break (Provided by IGCP)	
10:20	**Guided modeling exercise**	A workflow from geometric building to result visualization, illustrated through an example of heat transfer in porous and fractured media.	Daniela Blessent (Universidad de Medellín)
12:00		Lunch (Provided by IGCP)	
13:30	**Launch of Canada Research Chair**	Presentation of INRS and its new Canada Research Chair on Sustainable Geoenergy System Analysis	Isabelle Delisle (INRS)
14:00	**Automated optimization and sensitivity analysis**	Overview of the COMSOL Optimization Module Functionality.	Fiona Chapman (INRS)
14:30	**Interactive troubleshooting**	Troubleshooting the model built in the morning (Guided modeling exercise) or other models that the participants are working on.	Ysaline Bacon (INRS) – supported by Andrzej Bielecki (COMSOL)
17:00		Closure of the workshop	
17:30		Ice breaker at *Noctem* (at the expense of each participant)	

Day 2 (Tuesday, June 3): Thermal Response Test (TRT) training

https://INRS.zoom.us/j/83801682353

Time	*Activity*	*Description*	*Presenter*
8:15		Welcome (INRS downtown, Room 2403-05)	
8:30	**Welcome Remarks**	Opening remarks and overview of the day's program.	Jasmin Raymond (INRS)
8:40	**Conventional TRT**	Introduction to conventional Thermal Response Tests (TRT): principles, equipment, and general interpretation of results.	Hubert Langevin (Geotherma Solutions)
9:00	**TRT heating cables**	Introduction to heating cable TRT, including principles, equipment, interpretation approaches.	David Moreno (INRS)
9:30	**Fiber Optic Temperature Sensing for TRT**	Introduction to distributed fiber optic temperature sensing applied to Thermal Response Tests (TRT).	Karlo Borko (Geological Survey of Slovenia)
10:00	Transfer from INRS downtown to LISTE laboratory (Provided by IGCP)		
11:00	**Practical Training – Session 1**	Hands-on training. Participants will be divided into two groups: one focusing on conventional TRT and the other on heating cable TRT. Equipment setup and discussion.	Hubert Langevin (Geotherma Solutions) and David Moreno (INRS)
12:15	Lunch (Provided by IGCP)		
13:15	**Practical Training – Session 2**	Continuation of hands-on training with group rotation (conventional TRT and heating cable TRT). Equipment setup and discussion.	Hubert Langevin (Geotherma Solutions) and David Moreno (INRS)
14:30	**TRT Data Analysis**	Analysis and interpretation of Thermal Response Test results.	David Moreno (INRS)
15:30	Closure of the TRT training session and return to INRS downtown (Provided by IGCP)		

** The TRT demonstration will follow at the Laboratoires pour l'innovation scientifique et technologique de l'environnement (2605, boul. du Parc-Technologique, Québec).*

Day 3 (Tuesday, June 4): Launch of the Canada Research Chair and technical presentations

https://INRS.zoom.us/j/83692193237

Time	*Talk Title*	*Presenter*
8:45	Welcome (INRS downtown, Room 2403-05)	
9:00	Canada Research Chair on Sustainable GeoEnergy Systems Analysis; A New Research Programs for Remote Regions	Jasmin Raymond (INRS)
9:20	Geothermal Education Across the IGCP-636 Network: A Global University Perspective	Aysegul Turan (Technical University of Darmstadt)
9:40	Exploring geothermal in a cooling-dominated climate and low-temperature region: Lessons learned, opportunities, and overview of projects	Mafalda Miranda (GRAnalytics Lda)
10:00	Project InnerSpace Initiatives: GeoFund, GeoMap, Curriculum Development & Standardization	Jackson Marshall Grimes (Project InnerSpace)
10:20	Coffee break (Provided by IGCP)	
10:40	Using the geothermal energy for greenhouse climate control	Reyhaneh Nazmabadi (Université Laval)
11:00	Evaluating the Geothermal Potential of Mine Water from an Active Mine: A Pilot Project in Quebec, Eastern Canada	Emna Bouzaiene (INRS)
11:20	From Gold to Heat: Unlocking Quebec's Mining Legacy through Geothermal Energy	Félix-Antoine Comeau (INRS)
11:40	Enhanced TRT experience in Slovenia	Karlo Borko (Geological Survey of Slovenia)
12:00	Lunch break (Provided by IGCP)	
13:20	Multiscale Thermal Conductivity Assessment of the St. Lawrence Lowlands (Québec, Canada): Integrating New Laboratory and TRT Data	David Moreno (INRS)
13:40	Estimating Thermal Conductivity of a Reference Sandstone Through an Analytical Model	Maria Alejandra Taborda Ortiz (INRS)
14:00	Thermo-hydraulic modeling in the Llanos Orientales basin of Colombia	Lina Riascos (Universidad de Medellín)
14:20	Numerical modeling of an integrated GT-HRV system for northern buildings	Geoffrey Viviescas Ibarra (CanmetEnergy)
14:40	Coffee break (Provided by IGCP)	
15:00	Preventing Frost Formation in a Heat Recovery Ventilator using a CO_2 Geothermal Thermosyphon: Full-scale experiments in cold-climate conditions	Muhammad Saad Khan Tareen (CanmetEnergy)
15:20	Reducing Uncertainty in Deep Geothermal Reservoir Models for Remote Communities: Study Case of Qamani'tuaq, Nunavut	Ysaline Bacon (INRS)
15:40	A methodological framework to assess the sensitivity and resolution of geophysical methods for deep fractured geothermal reservoirs in the Upper Rhine Graben	Ernesto Macedo Serrano (BRGM)
16:00	Afternoon at *Koriganne* (at the expense of each participant)	

Day 4 (Tuesday, June 5): Scientific field trip around Québec City

Time	*Activity*	*Description*	*Presenter*
8:00	Welcome (INRS downtown)		
8:15	**Departure to *École secondaire du Phare***	Transportation to the geothermal site (Provided by IGCP)	
9:00	**Field Visit – Geothermal System**	Technical visit of the geothermal heat pump system installed at *École secondaire du Phare*. Presentation of the project context, geothermal infrastructure, and operational aspects.	Philippe Giroux (CIMA+) and Jasmin Raymond (INRS)
12:00	Travel to Pont-Rouge (Provided by IGCP)		
13:00	Lunch, *Casse-croûte du Vieux-Moulin* (at the expense of each participant)		
14:00	**Visit to Pont-Rouge Research Site**	Field visit and presentation of the groundwater protection project in Pont-Rouge. Discussion about the granular aquifer context, recent drilling activities, and upcoming heat tracing research.	Daniel Paradis (INRS)
16:00	Return to INRS and end of the field trip (Provided by IGCP)		

Contact

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Organizers and sponsors

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PROJECT 636 Geothermal Resources for Energy Transition

IUGS International Union of Geological Sciences

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