IRSN workshop

Natural fractures in clayrock formations in the context of Geological Disposal of Radioactive Waste

September 29-30, 2022

➢ @ IRSN Conference room - Triangle building, Fontenay-aux-Roses, France, for speakers and chairmen
➢ Online or @ IRSN Conference room for other participants

Programme

29th Sept., 13:00-18:00

SESSION I – Fault architecture and fluid flow in clayrocks

Keynote: Christopher Wibberley (TotalEnergies, France)

Chairmen: Paul Bossart (former Director of the Mont Terri Project, Switzerland), Anita Torabi (University of Oslo, Norway), Pierre Dick (IRSN, France) and a representative from Nagra, Switzerland

Dinner for the registered attendees

30th Sept., 09:00-13:00

SESSION II – Scaling effects and modeling

Keynote: Eirik Keilegavlen (University of Bergen, Norway)

Chairmen: Simon Norris (Nuclear Waste Services, England), Rebecca Lunn (University of Strathclyde, Scotland), Edouard Veilly (IRSN, France)

Main goals and questions

SESSION I – Fault architecture and fluid flow in clayrocks

- What is the influence of fault architecture and fabrics on fluid flow?
- Which types of fractures are relevant for detection in terms of fluid flow and how can the permeability of the fractures change with time?
- Which tools are relevant for detecting these fractures before, during and after excavation works in a deep underground repository?
- Is there a link between the parameters measured by geophysics, the architecture of the fractured medium and their hydraulic properties inferred through petrophysical approaches?

SESSION II – Scaling effects and modeling

- How can one extrapolate permeability measurements from the core scale to the field scale?
- What natural/anthropic processes can induce a fluid (water and gas) flow through faults and influence the related pathways?
- What could be the role of different fracturing scales on the mechanical or hydraulic behavior of the geological medium?
- Which hydro-mechanical models are the most suitable to characterize a fault under different stresses?
- How to model cross formational flow due to permeable faults?
This workshop aims to bring together an international panel of scientists from industry, institutional entities and academia to gather the state-of-the-art and discuss an array of questions related to the presence and role of fractures in clayrocks, namely those concerning the occurrence of fluid flows through them.

The workshop will address topics related to the confining properties of fractured clay host rocks: how to better apprehend and to model them and what is the performance of caprocks in general.

**Registration and contact**

**P. Dick, J.M. Matray & M. Rocher**

MATRAY Jean Michel <jean-michel.matray@irsn.fr>; DICK Pierre <pierre.dick@irsn.fr>; ROCHER Muriel <muriel.rocher@irsn.fr>

- Registration is free of cost but limited to ~30 attendees (no limit online): please send us the filled form
- The 29th September 2022 dinner will be offered by IRSN to all physically present attendees