Welcome to the session HS8.1.1.

**Modern challenges in deterministic and stochastic subsurface modeling across multiple scales**

14.00-14.05 Welcome and Introduction

14:05-14:11 D433 Ulrich Maier, Alexandru Tatomin, and Martin Sauter

Hydrogeochemical modelling of mineral precipitation potentials in carbon capture and storage (CCS)

14:11-14:17 D435 Wolfgang Nowak, Teng Xu, Sebastian Reuschen, Harrie-Jan Hendriks Franssen, and Alberto Guadagnini

High-end solution techniques and accurate reference solutions: towards a community-wide benchmarking effort for stochastic inverse modeling of groundwater flow

14:17-14:23 D436 Alberto Guadagnini, Monica Riva, Shlomo P. Neuman, and Martina Siena

Geostatistical representation of multiscale heterogeneity of porous media through a Generalized Sub-Gaussian model

14:23-14:29 D438 Andrew Frampton and Liangchao Zou

Dispersion in small-scale discrete fracture networks with internal fracture roughness: Challenges for site-scale modelling

14:29-14:35 D439 Guillem Sole-Mari, Daniel Fernàndez-Garcia, Xavier Sanchez-Vila, and Diogo Bolster

Reactive transport in porous media with local mixing limitation: A Lagrangian modeling approach

14:35-14:41 D440 Emanuela Bianchi Janetti, Monica Riva, and Alberto Guadagnini

Natural springs’ protection and probabilistic risk assessment under uncertain conditions

14:35-14:41 D440 Valérie Plagnes, David Quirt, Antonio Benedicto, and Patrick Ledru

Hydrogeological modelling applied to mineral exploration

14:41-14:47 D442 Nicolae Suciu, Cristian Daniel Alecsa, Imre Boros, Florian Frank, Peter Knabner, Mihai Nechita, Alexander Prechtel, and Andreas Rupp

Numerical benchmark study for flow in highly heterogeneous aquifers

14:47-14:53 D443 Buse Yetişi, Nadim K Copty, Paolo Trinchero, and Xavier Sanchez-Vila

Impact of Flow Connectivity on the Interpretation of Pumping Test Data
Influence of distribution co-efficient on radionuclide transport modelling of uranium from a tailings pond in northern Karnataka, India

14:59-15:05 D446 Bhavya Ravinder and Elango Lakshmanan
An assessment of soil moisture in the MARINE flash flood model using in situ measurements, reanalysis and satellite derived estimates
Judith Eeckman, Hélène Roux, Bertrand Bonan, Clément Albergel, and Audrey Douniot

15:05-15:11 D447 Estimation of distributed parameters at regional scale by history-matching of a multi-layered sedimentary aquifer
Ryma Aissat, Alexandre Pryet, Marc Saltel, and Alain Dupuy
Estimation of groundwater recharge from time series modeling of groundwater levels in non-linear systems
Raoul Collenteur, Steffen Birk, Gernot Klammler, and Mark Bakker

Philippe Ackerer and Frédérick Delay
Development of the stochastic approach to groundwater hydrology: a personal account of G. de Marsily contributions.

15:35-15:41 D437 Jordi Bruno
The impact of Ghislain de Marsily in Nuclear Waste Management

15:41-15:45 Wrap up/CIAO