



The third annual meeting and porous media workshop of the Spanish InterPore Chapter was held at the Retiro Building of the School of Civil Engineering of the Technical University of Madrid (UPM) on 26 October 2022. There was a total number of 54 participants from academia and industry, of which 36 participated in person, 18 remotely. All the talks and posters were presented in person. The workshop had a diverse program with 7 invited presentations on subsidence, random forests, the rheology of granular and active matter, modeling of bentonite and its expansion, methane hydrates and karst hydrology, as well as 11 posters on convective mixing, induced seismicity, chaotic porous media flow, diffusiophoresis, compound separation by membranes, machine learning, bacterial growth, phase changes, osmosis, microporous membranes and membrane distillation. The workshop provided a forum for knowledge exchange and creating new links between researchers in different porous media disciplines from academia and industry. The general assembly with a report on the state of the chapter and discussion was held in the afternoon. The detailed program is attached below.

The workshop was organized by Luis Cueto-Felgueroso, Francisco Javier Elorza and David Santillan (local committee) and Marco Dentz, Juan J. Hidalgo, Laura Gonzalez-Blanco, Elena Abarca, Maria Pool and Maria Barragan.

Program of the III Porous Media Workshop of the Spanish InterPore Chapter

10:00-10:30: **Arrival and welcome**

10:30-12:00: **Scientific program**

- Invited lecture: Carolina Guardiola (IGME)

Title: *Subsidence by groundwater exploitation in the Madrid detrital aquifer*

- Invited lecture: Jaime Gomez-Hernandez (UPV):

Title: *Ensemble Random Forest Filter*

- Invited lecture: Alberto Fernandez-Nieves (UB, ICREA)

Title: *Grains, ants, active matter, and the emergent behavior of ant columns*

12:00-12:30: **Coffee break & posters**

12:30-13:30: **Scientific program**

- Invited lecture: Vicente Navarro (UCLM)

Title: *Modeling of a granular bentonite system as a discrete set of continuum units*

- Invited lecture: Jean Vaunat (UPC)

Title: *Formation and dissociation of methane hydrates in marine sediments. Problems, physical processes and modeling*

13:00-14:30: **Lunch**

14:30-15:30: **Scientific program**

- Invited lecture: Arnau Pont (AMPHOS)

Title: *Numerical modelling of bentonite expansion, erosion and sedimentation in fractures*

- Invited lecture: Eugenio Sanz (UPM)

Title: *Paleohydrogeology of a karstic system of Fuentetoba, Iberian Cordillera*

15:30-16:30: **General assembly, report on the state of the chapter, discussion**

16:30-18:00: **Poster session**

- Rima Benhammadi (IDAEA-CSIC): *Convective mixing in heterogeneous porous media- case of the HRL problem*

- Sandro Andres (UPM): *Induced seismicity and thermal depletion: numerical simulation of hydraulic stimulation in geothermal reservoirs*

- Tomás Aquino (IDAEA-CSIC): *Fluid-solid reaction under chaotic flow through porous media*

- Mamta Jotkar (IDAEA-CSIC): *Diffusiophoresis in porous media*

- Mayra A. Mora (UCM): *Development of a system based on porous membranes and polymers in solution for the separation of phenolic compounds present in agricultural residues of banana (*Mussa spp*) crops*

- Ersin Aytaç (Zonguldak Bülent Ecevit University): *Machine learning on porous membranes used in membrane distillation*
- Araceli Martín Candilejo (UPM): *Pore-scale bacterial growth in laminar flow*
- Javier Fernández-Fidalgo (UPM): *Simulation of transition flows and phase changes in porous media by modified EoS to obtain the correct surface tension*
- Esther García Merino (UCM): *Recycling of reverse osmosis membrane modules as support of nanostructured porous membranes for membrane distillation*
- Omayra B. Ferreiro (Universidad Nacional de Asunción, UCM): *Design of microporous polymeric membranes by thermodynamic and kinetic characterization of the phase inversion process*
- Leslie Ricardo (UCM): *Preparation of hydrophobic microporous membranes for membrane distillation using solvents*

