Flow and Deformation Across Scales, Marupiara Resort Porto de Galinhas, 13-17 March 2023, Brazil.

Presentations: 20 minutes + questions. Keynote speakers: 30 minutes + questions.

Monday 13.03.2023

09:00 - 09:15	François Renard - Marcel Moura	Njord, PoreLab, UiO, Norway	Welcome and introduction
Session: Fluid flow in porous media		**Chair: Kevin Pierce**	
09:15 - 09:55	**Hans Herrmann (keynote)**	ESPCI, France	Rolling matter
09:55 - 10:25	Marcel Moura	Njord, Porelab, UiO, Norway	Thin film flow: fluid transport and pollution spreading in porous media
10:25 - 10:55	Paula Reis	Njord, PoreLab, UiO, Norway	A modified invasion-percolation model for drainage in quasi-2D porous media
10:55 - 11:15	Break / coffee		
11:15 - 11:55	**Marcio Carvalho (keynote)**	Pontifical Catholic University of Rio, Brazil	Two-phase flow in vuggular porous media
11:55 - 12:25	Michael Chen	University of Minnesota, USA	Inertial flows and density driven convection during pore scale mineral dissolution
12:25 - 12:30	Info/update		
12:30 - 13:15	Lunch		
13:15 - 16:00	Open discussion		
Session: Friction and fracture processes		**Chair: Rakul Johannesen**	
16:00 - 16:40	**Elsa Bayart (keynote)**	Ecole Normale Supérieure de Lyon, France	How localized disorder affects the onset of frictional sliding
16:40 - 17:10	Erina Prastyani	Njord, UiO, Norway	Microphysical characterization of crack growth and the transition from brittle to semi-brittle deformation in crustal rocks.
17:10 - 17:30	Break		
17:30 - 18:10	**Emilie Dressaire (keynote)**	UC Santa Barbara, USA	Fluid-driven fractures in brittle elastic substrates
18:10 - 18:40	Marthe Guren	Njord, UiO, Norway	Machine-learned interatomic potentials for nanoscale fracturing of quartz and basalt
18:40 - 19:00	James Hollingsworth	Univ. Grenoble Alpes, France	Characterizing near-field deformation in surface rupturing earthquakes with image correlation
19:00 - 19:30	Open discussion		
19:30	Dinner		

Tuesday 14.03.2023

Session: Intermittency and emergent phenomena		**Chair: Erina Prastyani**	
09:00 - 09:40	**Nicolas Taberlet (keynote)**	Ecole Normale Supérieure de Lyon, France	Surface instabilities of a granular bed sheared by pulling a surface slider
09:40 - 10:10	Joachim Mathiesen	Njord, UiO, Norway & Univ. Copenhagen, Denmark	Enhanced dispersion in intermittent multiphase flow
10:10 - 10:40	Clecio Silva	Univ. Federal de Pernambuco, Brazil	Multiscale emergent phenomena in composite magnetic-skyrmion— superconducting-vortex systems
10:40 - 11:00	Break / coffee		
11:00 - 11:40	**Peter Kang (keynote)**	University of Minnesota, USA	Effects of mixing at fracture intersections on reactive transport across scales
11:40 - 12:10	Paiman Shafabakhsh	Njord, UiO, Norway	Neutron and X-ray imaging of fluid flow and mixing during mineral precipitation in porous rocks
12:10 -12:15	Info/update		
12:30 - 13:15	Lunch		
13:15 - 16:00	Open discussion		
Session: Fluid flow in porous media		**Chair: Khobaib Khobaib**	
16:00 - 16:40	**Bjorn Birnir (keynote)**	UC Santa Barbara, USA	The stochastic closure theory of Eulerian turbulence
16:40 - 17:10	Kevin Pierce	Njord, PoreLab, UiO, Norway	Chaotic mixing in two-dimensional unsteady porous media flow
17:10 - 17:30	Break		
17:30 - 18:10	Andreas Carlson	Maths, UiO, Norway	Droplet transport on fibers
18:10 - 18:30	Eduardo Dias	Universidade Federal de Pernambuco, Brazil	Controlling viscous fingering and fluid adhesion forces
18.30 - 19.00	**José Soares (keynote)**	Universidade Federal do Ceará, Brazil	Bubble dynamics in stationary two-phase flow through disordered porous media
19:00 - 19:30	Open discussion		
19:30	Dinner		

Wednesday 15.03.2023

Session: Friction and fracture processes		**Chair: Marthe Guren**	
09:00 - 09:40	**Renaud Toussaint (keynote)**	Njord, PoreLab, UiO, Norway & Univ. Strasbourg, France	Avalanches in fracture, and anthropogenic seismicity due to fluid motion in the Earth crust.
09:40 - 10:10	François Renard	Njord, UiO, Norway	Dynamic damage in dry and wet rocks monitored by ultra-fast synchrotron imaging
10:10 - 10:40	Mehdi Nikkhoo	Univ. Southern California, USA	Evolving rock damage associated with pressurized magma bodies: Volcanic crises are often caused by pressurized magma bodies.
10:40 - 11:00	Break / coffee		
Session: Intermittency and emergent phenomena		**Chair: Marthe Guren**	
11:00 - 11:40	**Antônio Murilo Macedo (keynote)**	Universidade Federal de Pernambuco, Brazil	The Quantum Hall transition as a complex hierarchical multifractal phenomenon
11:40 - 12:05	Arthur Brum	Universidade Federal de Pernambuco, Brazil	Analytical solutions for the dynamics of a single bubble in a Hele-Shaw cell
12:05 - 12:30	Írio Abreu	Universidade Federal de Pernambuco, Brazil	Effect of interfacial rheology on fingering patterns in Hele-Shaw flows
	Info/update		
12:30 - 13:15	Lunch		
13:15 - 13:45	**Nadia Zamboni**	BioFábrica de Corais, Brazil	Using biotechnological tools for coral restoration and management: the methodology of Biofabrica de Corais
Afternoon	**Coral field trip**		
19:30	Dinner		

Thursday 16.03.2023

Session: Fluid flow in porous media		**Chair: Paiman Shafabakhsh**	
09:00 - 09:40	**Tanguy Le Borgne (keynote)**	Njord, UiO, Norway & Univ. Rennes, France	Mixing and segregation in porous media from rocks to brain micro-vascular processes
09:40 - 10:10	Sang Lee	University of Minnesota, USA	Enhanced oil removal by fungi in fractured porous media
10:10 - 10:40	Khobaib Khobaib	Njord, PoreLab, UiO, Norway	Experimental studies of slow drainage in porous media: Effect of the randomness of the porous medium on the fluid flow
10:40 - 11:00	Break / coffee		
11:00 - 11:30	Yves Méheust	Univ. Rennes, France	Dissolution trapping of CO_2: New advances based on pore-scale resolved experiments in 3D granular media
09:55 - 10:25	Hongfan Cao	University of Minnesota, USA	Density effects on the emergence of unstable focused flow in fractured systems
12:00 - 12:30	Rakul Johannesen	Njord, UiO, Norway	Fractures in basalt as a reservoir for permanent CO_2 storage on the Faroe Islands.
12:30 - 13:15	Lunch		
13:15 - 16:00	Open discussion		
Session: Intermittency and emergent phenomena		**Chair: Paula Reis**	
16:00 - 16:40	**Giovani Vasconcelos (keynote)**	Universidade Federal do Paraná, Brazil	Statistical mechanics of hierarchical systems (H-Theory): Fundamentals and basic applications
16:40 - 17:10	Cristiano Woellner	Universidade Federal do Paraná, Brazil	Mechanical energy absorption properties of a new class of nanoscale carbon-based structures called hierarchical schwarzites
17:10 - 17:30	Break		
17:30 - 18:00	Ériton Araujo	Universidade Federal de Pernambuco, Brazil	
18:00 - 18:30	Leonardo Virgínio Bastos	Universidade Federal do Paraná, Brazil	Thermal transport properties of schwarzites
18:30	François Renard - Marcel Moura	Njord, PoreLab, UiO, Norway	To sum it up
19:30	Dinner		