

## Session Program

May 30, 2022 to June 2, 2022



# InterPore2022

## MS15

# Tue, May 31

4:30 PM

## MS15: Parallel Oral Session 6E

Session

4:30 – 4:45 PM

### **Image-based Petrophysical Characterization of Porous Media: A Comparative Study of Common Deep-learning-based Denoising Algorithms**

**Speaker**

Amogh Adishesha

4:45 – 5:00 PM

### **Towards Pore Super Segmentation on Artificially Enhanced SEM Images of Opalinus Clay by Voting Classification**

**Speaker**

Mr Marco Brysch

5:00 – 5:15 PM

### **Machine/Deep Learning Methods for Pore-Mineral Characterization and Surface Areas Analysis**

**Speaker**

Mrs Parisa Asadi

5:15 – 5:30 PM

### **Fitting correlation-based and neural-network-based relative permeability models to a large dataset of forced and spontaneous imbibition experiments**

**Speaker**

Helton Magno Ciriaco

5:30 – 5:45 PM

### **Estimating permeability of real-rock micro-CT images by physics-informed neural networks**

**Speaker**

Stephan Gärttner

5:45 – 6:00 PM

### **10,000-cubed Digital Rock Analysis: Beyond Hardware Super Resolution Imaging and Efficient HPC Modelling**

**Speaker**

Ying Da Wang

6:00 PM

# Wed, June 1

10:30 AM

## MS15: Parallel Oral Session 7E

Session

10:30 - 10:45 AM

**U-FNO - an enhanced Fourier neural operator-based deep-learning model for multiphase flow**

**Speaker**

Ms Gege Wen

10:45 - 11:00 AM

**Reduced order modeling with Barlow Twins self-supervised learning: Navigating the space between linear and nonlinear solution manifolds**

**Speaker**

Teeratom Kadeethum

11:00 - 11:15 AM

**Physics-enhanced Convolutional Neural Networks for Predicting Effective Dispersion in Porous Media**

**Speaker**

Ross Weber

11:15 - 11:30 AM

**Deep Learning Accelerated History Matching and Forecasting for Geologic CO2 Sequestration**

**Speaker**

Dr Bailian Chen

11:30 - 11:45 AM

**Data-driven production optimization utilizing multi-objective particle swarm algorithm based on ensemble-learning proxy model**

**Speaker**

Shuyi Du

11:45 AM - 12:00 PM

**Data-Driven Physics-informed Interpolation Evolution Combining Historical-Predicted Knowledge for Remaining Oil Distribution Prediction**

**Speaker**

Mr Jingwei Zhu

12:00 - 12:15 PM

**Upscaling of Realistic Discrete Fracture Simulations Using Machine Learning**

**Speaker**

Nikolai Andrianov

12:15 PM

## Thu, June 2

9:10 AM

### MS15: Parallel Oral Session 10E

Session

9:10 – 9:25 AM

#### Machine Learning for Porosity and Absolute Permeability Prediction from Carbonate Rock Images

**Speaker**

Mr Ramanzani Kalule

9:25 – 9:40 AM

#### Morphology Decoder: Untangling Heterogeneous Porous Media Texture and Quantifying Permeability and Capillary Pressure by Semantic Segmentation

**Speaker**

Dr Omar Alfarisi

9:40 – 9:55 AM

#### Twisting the ensemble Kalman filter with random forest

**Speaker**

Dr VANESSA A. GODOY

9:55 – 10:10 AM

#### Semantic segmentation of rock images and ensemble approach for deep learning methods

**Speaker**

Robert John Ringer

10:10 AM

11:20 AM

### MS15: Parallel Oral Session 11E

Session

11:20 – 11:35 AM

#### Digital twin of a laboratory-scale porous medium

**Speaker**

Jakub Both

11:35 – 11:50 AM

#### Multi-scale reconstruction of porous media from low-resolution core images using conditional generative adversarial networks

**Speaker**

Fugui Liu

12:05 – 12:20 PM

#### Stylolite detection and image classification from whole core images using convolutional neural networks

**Speaker**

Dr Saeid Sadeghnejad

12:20 PM

1:30 PM

**MS15: Parallel Oral Session 12E**

Session

1:30 – 1:45 PM

**The Method Of Solving incompressible Two-phase Seepage Equation In Porous Media By Deep Neural Networks****Speaker**

Dr JiangXia Han

1:45 – 2:00 PM

**Image-based physics-constraint workflow for multi-phase flow simulation in heterogeneous media****Speaker**

Prof. Bicheng Yan

2:00 – 2:15 PM

**Machine learning to accelerate nonlinear solvers applied to multiphase porous media flow****Speaker**

Mr Vinicius Santos Silva

2:15 – 2:30 PM

**Multiscale modelling of permeability and effective dispersion coefficient in porous media: a deep learning approach****Speaker**

Agnese Marcato

2:30 – 2:45 PM

**Improving the Performance of Reactive Transport Simulations using Artificial Neural Networks****Speaker**

Emilie Coene

2:45 – 3:00 PM

**Upscaling investigations of dissolution using machine learning and GeoChemFoam****Speaker**

Hannah Menke

3:00 – 3:15 PM

**A Full Order, Reduced Order and Machine Learning Model Pipeline for Efficient Prediction of Reactive Flows****Speaker**

Prof. Oleg Iliev

3:15 PM