



MCERI Annual Meeting

OXY Woodlands Campus 1201 Lake Robbins Dr. The Woodlands, TX

November 2-3, 2023

Agenda

DAY 1 – Thursday, November 2, 2023

- 7:30 AM Breakfast
- 8:30 AM Opening Remarks
Akhil Datta-Gupta and Michael J. King, Texas A&M University (15 min)
- 8:45 AM An Efficient Deep Learning-Based Workflow for CO₂ Plume Imaging with Distributed Pressure and Temperature Measurements
Masahiro Nagao (25 min)
- 9:10 AM High Resolution Modeling of Pore Pressure Change, Fault Slip Potential and Induced Seismicity in the Fort Worth Basin
Changqing Yao (25 min)
- 9:35 AM Subsurface Injection Monitoring in Complex Geologic Media Using Pathline, Source Cloud and Time Cloud
Ao Li (25 min)
- 10:00 AM Streamline-based Three-phase History Matching for CO₂ Flooding Field Application
Ruxin Zhang (25 min)
- 10:25 AM Break (20 min.)
- 10:45 AM Multi-Resolution Simulation for Efficient Pressure & Stress Change Calculation in Large-Scale CCS Reservoirs Using PSS Pressure as Spatial Coordinate
Kazuyuki Terada (25 min)
- 11:10 AM A Deep-Learning Based Accelerated Workflow for Robust CO₂ Plume Imaging at the Illinois Basin-Decatur Carbon Sequestration Project
Changqing Yao (25 min)
- 11:35 AM Physics-informed Machine Learning for Reservoir Connectivity Identification and Robust Production Forecasting
Masahiro Nagao (25 min)
- 12:00 PM Lunch (75 min.)
- 1:15 PM Industry Presentation
A Novel Hierarchical Global-Local Model Calibration Method for Deep Water Reservoirs Under Depletion and Aquifer Influence
Omer Alpak, Shell



- 1:45 PM Models for Upscaling and Depletion in High Contrast Systems
Yaser Alghawi (25 min)
- 2:10 PM Accelerated Deep Learning-based Workflow for CO₂ Plume Imaging in Saline Aquifer Using Diffusive Time of Flight
Takuto Sakai (15 min)
- 2:25 PM Break (30 min.)
- 2:55 PM Field Application of a Novel Multi-Resolution Multi-Well Unconventional Reservoir Simulation: History Matching and Parameter Identification
Jia Fu (20 min)
- 3:15 PM New Rapid Solutions for Production Analysis from Multi Transverse Fracture Wells
Ismail Mohamed (20 min)
- 3:35 PM Accelerated CO₂ Storage Optimization using Multi-Resolution Fourier Neural Operator in IBDP Field Case
Chin Hsiang Chan (15 min)
- 3:50 PM Discussion and Wrap-up
Michael J. King and Akhil Datta-Gupta, Texas A&M University (30 min.)
- 5:00 PM Reception
- 6:00 PM Dinner

DAY 2 – Friday, November 3, 2023

- 7:30 AM Breakfast
- 8:00 AM Opening Remarks
Akhil Datta-Gupta and Michael J. King, Texas A&M University
- 8:15 AM DESTINY: A Software for Flow Visualization, History Matching and Rate Allocation Optimization Using Streamlines
Ao Li
- 9:15 AM FMMSIM: Fast Marching Based Rapid Simulation
Kazuyuki Terada
- 10:15 AM Break
- 10:45 AM SPADES: Production Data Analysis for Unconventional Reservoirs
Ismail Mohamed
- 11:15 AM SWIFT: Upgridding and Upscaling
Yaser Alghawi
- 12:00 PM Lunch and Adjourn