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**GERC**

GeoEnergy Research Centre

*Workshop*

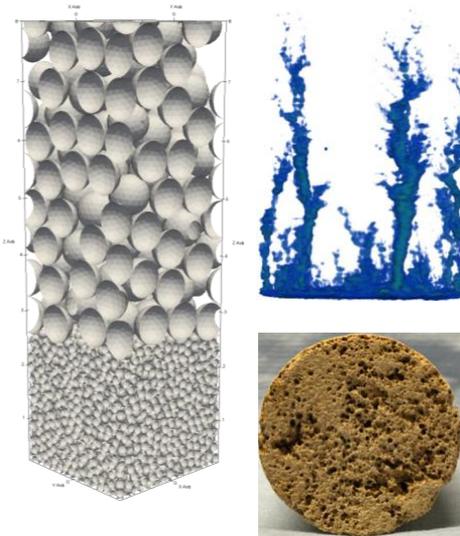
# VALIDATION APPROACHES FOR MULTISCALE POROUS MEDIA MODELS

16-17-18 July 2018  
University of Nottingham, UK

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## *Description*

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One of the main difficulties in building numerical models with predictive capabilities for practical applications involving porous media is often the large disparity between the scale at which processes can be understood from first principles, and the scale at which practical predictions are needed and experiments are available. Multiscale techniques and models are therefore critically needed to fill this gap and provide ways to correctly interpret lab-scale data, connect them to microscale physics and upscale to field-scales. To this aim, it is imperative that any model, particularly the ones relying on multiscale assumptions, undergoes rigorous experimental validations. A consistent and systematic approach to calibrate and validate multi-scale models is still an open problem.

The aim of the workshop is to bring together experimentalists, modellers, and computational scientists with interests in the flow and transport through porous materials from different areas (Engineering, Physics, Mathematics), with the intent of identifying:

- Numerical and experimental benchmarks for testing and developing models and solvers
- Best practices for validation, calibration, and uncertainty quantification of porous media models
- New modelling frameworks to explain currently poorly understood transport phenomena

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## *Organisers*

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Dr. Matteo Icardi, [matteo.icardi@nottingham.ac.uk](mailto:matteo.icardi@nottingham.ac.uk)

Dr. Bagus Muljadi, [bagus.muljadi@nottingham.ac.uk](mailto:bagus.muljadi@nottingham.ac.uk)

Dr. Juan Manuel Mejia, [jmmejiaca@unal.edu.co](mailto:jmmejiaca@unal.edu.co)

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## *Invited Speakers*

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Richard Zabala (Ecopetrol)  
Marco Dentz (CSIC, Barcelona)  
Rajandrea Sethi (Politecnico di Torino)  
Giovanni Porta (Politecnico di Milano)  
Florian Doster (Heriot-Watt)  
Marco Bianchi (British Geological Survey)

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## *Sessions*

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- GeoEnergy Test Bed facility: presentation and collaboration opportunities
- Nanofluids for Subsurface Applications
- CTRW and Stochastic Upscaling
- Robust Upscaling and Macroscale Parameter Estimation

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## *Registration*

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A registration fee of £50 will include refreshments, lunches, social dinner (Monday night), and (to be confirmed) a tour at the GeoEnergy Test Bed facility.

Early career researchers (PhD students, postdocs, young academics) can obtain a free registration, upon request.

Please register using [this link](#) and submit your abstract for a poster or oral presentation by June 10<sup>th</sup>.

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## *Venue*

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The workshop will be hosted by the School of Mathematical Sciences (Room A17) at the University of Nottingham

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