EPSRC PhD Projects List 2023

Project Title	Lead Supervisor
Modelling Extreme Weather Events using Data Science, Machine Learning, and Social Sentiments	Dr Rossella Arcucci
Breathe In, Breathe Out, combining machine learning with data analysis, fusion and data assimilation for incomplete, noisy air pollution data	Dr Rossella Arcucci
Towards net-zero: Machine Learning and Data Science for the analysis of corporate environmental impact	Dr Rossella Arcucci
Pore-scale Imaging and Analysis of Multiphase Flow in Improved Oil Recovery by X-Ray Tomography	Dr Branko Bijeljic
Pore-scale Modelling and Analysis of Reactive Transport in Carbon Storage and Oil Recovery	Dr Branko Bijeljic
Minimal surfaces in porous materials: wettability design for optimal flow performance	Professor Martin Blunt
Topology, wettability and fluid flow in porous materials	Professor Martin Blunt
Pore-Scale Imaging, Analysis, and Data-Driven Pore-Scale Modelling	Professor Martin Blunt
Coupling Life Cycle Assessment and modelling tools to inform sustainable mineral resource management	Dr Pablo Brito-Parada
Modelling and predicting flotation froth stability	Dr Pablo Brito-Parada
Simulating submarine slide tsunami inundation of the Shetland Islands	Professor Gareth Collins
Optimisation of sensor locations for observation of air flows/pollutions	Dr Fangxin Fang
Rapid Response Modelling for Assessment of Pollution and Toxic Releases in Complex Urban Environments	Dr Fangxin Fang
New generation data assimilation and rapid response models for urban flooding	Dr Fangxin Fang
Redundancy, retiming and data flow in compiling finite-difference applications for many core architectures	Dr Gerard Gorman
Simulation of geo-thermal wells with reduced order modelling and data assimilation	Dr Claire Heaney
Large Scale AI Modelling for Environmental Flows	Dr Claire Heaney
Applying Dimensionality Reduction to Solutions on Finite Element Meshes with Autoencoders	Dr Claire Heaney
A Machine Learning Approach to Represent Carbonate Heterogeneities in Forward Stratigraphic Models	Dr Cédric M. John
Extending the carbonate clumped isotopes paleothermometer to new mineral systems: a computer modelling approach	Dr Cédric M. John
Global CO2 storage capacity: Modeling limitations of geography and injectivity	Dr Sam Krevor

Modelling the physics of granular rock compaction for characterisation of flow in reservoirs	Dr John-Paul Latham
Simulation of charge-slurry interactions in tumbling and stirred mills	Professor Stephen Neethling
The impact of mineral texture on the relationship between particle size, surface exposure and mineral liberation: A key to coarse particle flotation	Professor Stephen Neethling
PhD studentship in Next-Generation Fracture Modelling	Dr Adriana Paluszny
Multi-scale characterization of water flow in submarine hydrothermal systems	Dr Michele Paulatto
Accelerating Scientific Discovery of Complex Scientific Applications with Process-Guided Deep Learning: Aquatic Eco-Dynamics in Lakes	Professor Matthew Piggott
Understanding and minimising the potential environmental impacts of tidal range (lagoon) based renewable energy generation via advanced numerical modelling	Professor Matthew Piggott
Environmental effects and fate of engineered nanomaterials	Professor Mark Rehkämper
Forensic Detection of Microplastics	Professor Mark A. Sephton
Nuclear Waste – How to deal with it safely	Professor Dominik Weiss