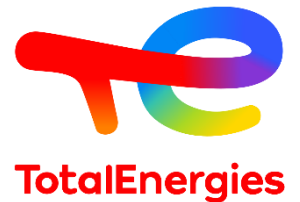


POSTDOCTORAL RESEARCH POSITION



CONTEXT PRESENTATION

Digital Rock Physics (DRP) technology has the potential to disrupt the way rock properties are determined and can half the time required to obtain them.

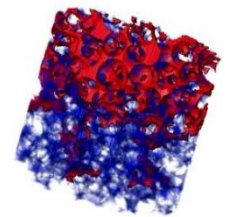
TotalEnergies has been working for several years on this simulation technique and is among the leaders of this subject in the world. Today, we would like to build on this expertise and use this technology to compute petrophysical properties but also on other applications needed for the energy transition and the company transformation for applications in CCUS, H2 storage, fuel cells/electrolyzers , batteries ...)

This research associate position is part of an effort to model multiscale porous media and to improve the computational performance of pore scale simulation tools to achieve larger simulations. The work will be conducted by a young and highly multicultural, multi-discipline team of four numerical simulation researchers and in close collaboration with the experimental Digital Rock Physics team of TotalEnergies and external research organizations. The candidate will also have access to TotalEnergies industry leading CPU and GPU based HPC clusters.



YOUR CHALLENGE

- Develop methodologies to accelerate pore scale simulation using deep learning
- Use deep learning to improve the physics of pore scale simulation
- Validation of the new models against experimental data
- Work closely with the other researchers of the team and the external partners
- Participate to internal and external meetings
- Publish in conferences and peer review journals



Keywords: #multiscale, #DeepLearning, #PoreScale, #FlowSimulation, #PorousMedia, #DigitalLab, #HPC, #fast, #cheap

QUALIFICATIONS

- A PhD degree in engineering, applied mathematics, physics or a related field.

REQUIRED SKILLS

- Good knowledge in Direct Numerical Simulation (DNS)
- Excellent coding skills (C++ and Python)
- Good understanding of pore scale physics
- Excellent team working and presentation skills

DESIRED SKILLS

- Experience in machine learning
- Knowledge of Pore Network Modelling

APPLICATION

Please send you CV to mohamed.regaieg@totalenergies.com

