

## Modeling of carbon sequestration in digital sandstones

### Background:

Carbon dioxide (CO<sub>2</sub>) storage in sandstone formations is a promising method for mitigating atmospheric CO<sub>2</sub> levels, leveraging the permeable nature of sandstone to contain CO<sub>2</sub> securely over long periods. The process involves injecting CO<sub>2</sub> into deep-lying sandstone layers, where it is trapped by impermeable cap rocks, preventing its escape to the surface. Major projects and research are assessing the viability and effectiveness of this method, underscoring its potential as a key player in carbon capture and storage strategies.

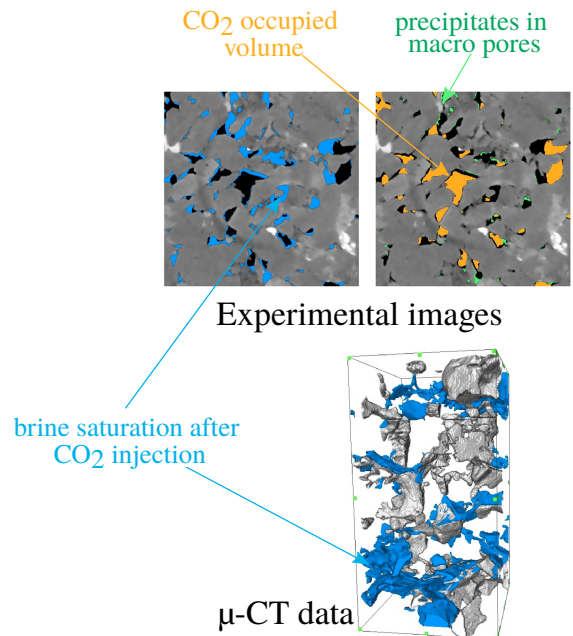


Image adapted from Ott et. al (2014)

### Your Tasks:

- Modeling two-phase flow, with evaporation and crystallization processes.
- Perform sensitivity analysis for different key factors.
- Documentation of results.

### Requirements:

For the preparation of the thesis work, foundational understanding in materials science and physics will be beneficial. A keen interest in engaging with numerical simulations, along with a willingness to explore new methodologies and areas of study, is desired.

### Your benefits:

- Intensive Supervision and support
- Modern workstations and high-performance computers in work environment
- Productive and dynamic team atmosphere
- Collaborations with international research groups
- Career prospects for early-career scientists

### Interested in working with us?

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