Impact of the fluvial sedimentary heterogeneity on the CO₂ storage

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ADEME



Introduction

- Started in october 2008
- Financed by :
 - The French Energy Agency (ADEME)
 - The French Geological Survey (BRGM)
- Universitary Laboratory : Laboratory of Carbonate System and Reservoirs from Aix-Marseille
- 3 domains involved in the project :
 - Sedimentology
 - Geomodelling
 - Flow modelling
- → Study the fluvial heterogeneity and show how they may decrease peformance of CO2 geological storage.

Field Work (year 1)

- Formation : The Minjur Sandstone in Saudi Arabia.
- Purposes :
 - Reservoir Characterization
 - Diversity of the sedimentary bodies
 - Connectivity
 - Geological model





Communication at GeoBahrein 2010
Article in process for GeoArabia

Geological Modelling (year2)

- From a conceptual model, build architectural models accounting for heterogeneities.
- Study the impact of the heterogeneities on the compartmentalization of the reservoir.
- Reproduce the geological concept through "classical available methods" and with rare data (often critical in deep saline aquifer projects).



Flow simulation (year3)

- Impact of the heterogeneities on the injectivity and capacity of the reservoir
- Comparison of flow simulation in key models selected through statistical analysis



Issautier et al., 2008 (University of Nice, internship report)