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Multiscale simulations of modified salinity waterflooding in chalk

Simulation and modeling group¹

¹ Danish Offshore Technological Centre, Technical University of Denmark

The positive effect of modified salinity water injection on oil recovery from a reservoir has been largely documented in the literature through numerous core flooding experiments. Yet, the mechanisms leading to the increased oil recovery at the core scale could only be exposed through additional molecular and pore-scale experiments. Thus, to get a proper understanding and description of the chalk-brine-oil system we cover the entire multiscale and model the system at the pore, core, and field scale. Using this multiscale modelling approach, the pore-scale and core-scale observations can be upscaled to the field scale so that we can reliably predict the outcome of the implementation of modified salinity waterflooding in a Danish North Sea chalk reservoir.



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