

# Model Based Design of Subsea Architectures with a High Integrity Pressure Protection System (HIPPS)

## Research Themes

- Modeling of transient multiphase flow
- Model-based design of High Integrity Pressure Protection Systems (HIPPS)
- Evaluation of the HIPPS installation effect on the subsea project CAPEX
- Modeling, design and optimization of multiple-wells subsea architectures

## Recent Accomplishments

- Development of a physics-based dynamic multiphase flow simulator offering an alternative to commercial extensively calibrated software packages
- Validation of the developed multiphase flow model against experimental results
- Development of a subsea architecture optimization tool
- One journal publication and two conference proceedings

## Issues

- The complexity of multiple-wells subsea architectures
- The inaccuracy of the multiphase flow simulators leading to poor subsea architectures design
- The optimization the subsea architectures design to reduce the CAPEX without compromising safety



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