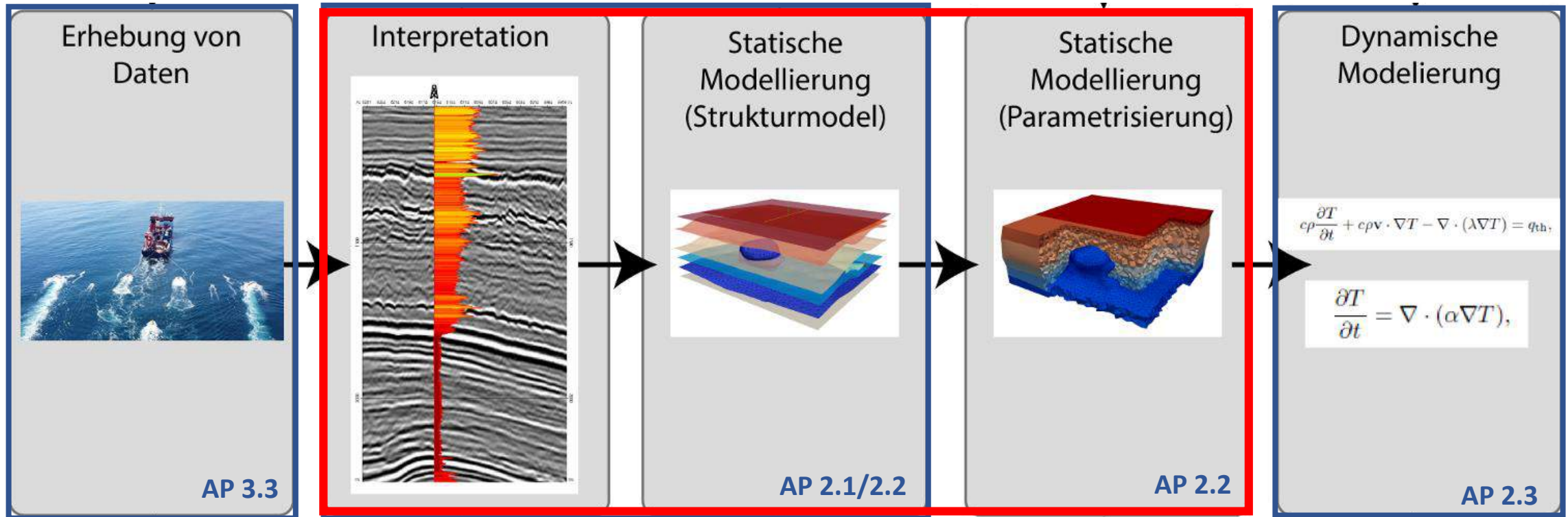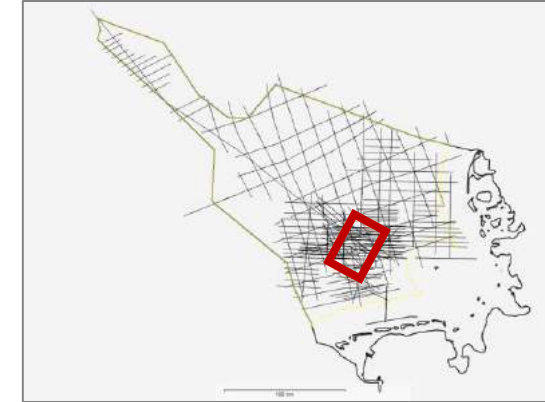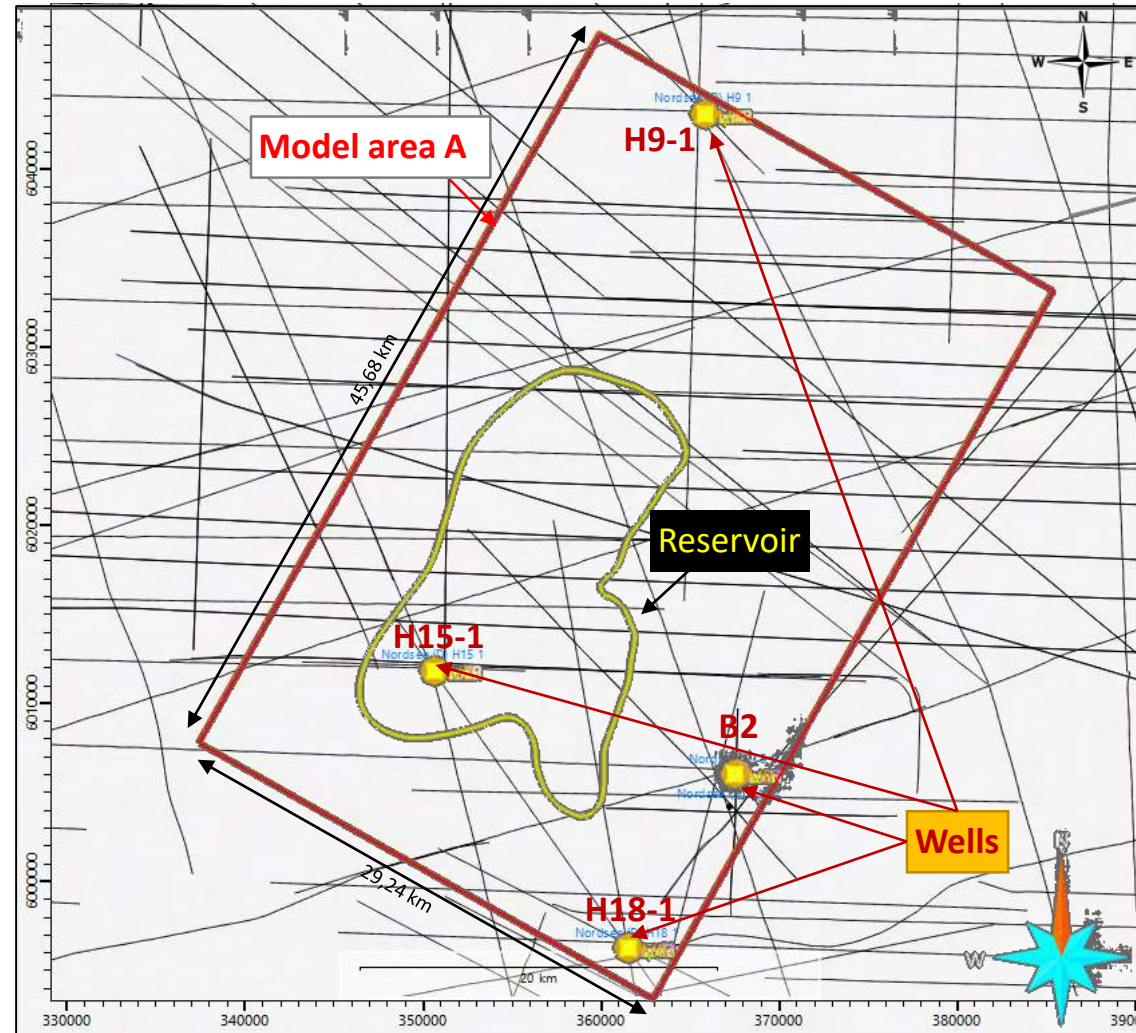# AP2.2: *Erstellung detaillierter Reservoirmodelle für zwei geologisch unterschiedliche Gebiete in der Nordsee*
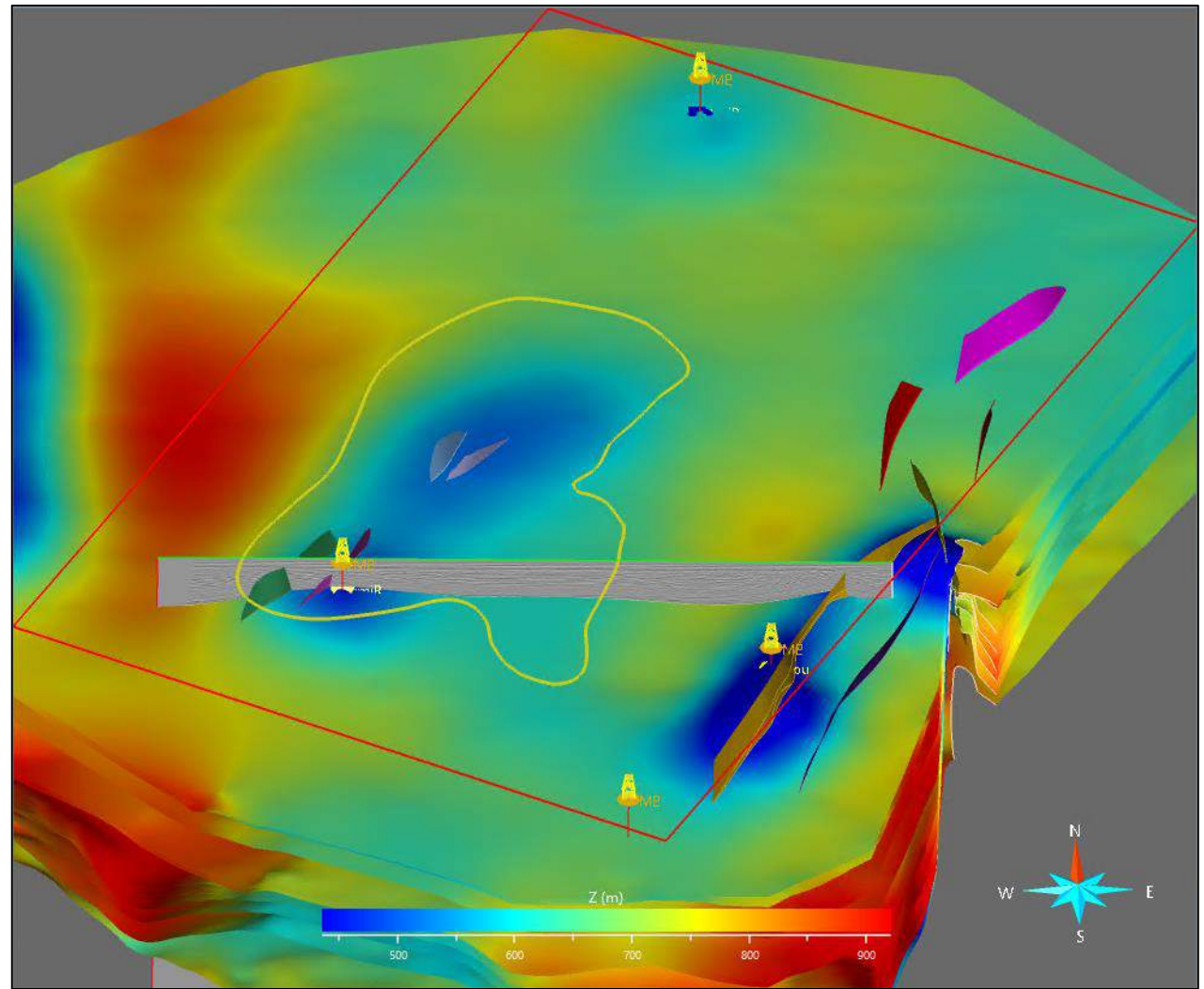
Workflow 3D Geological Modelling

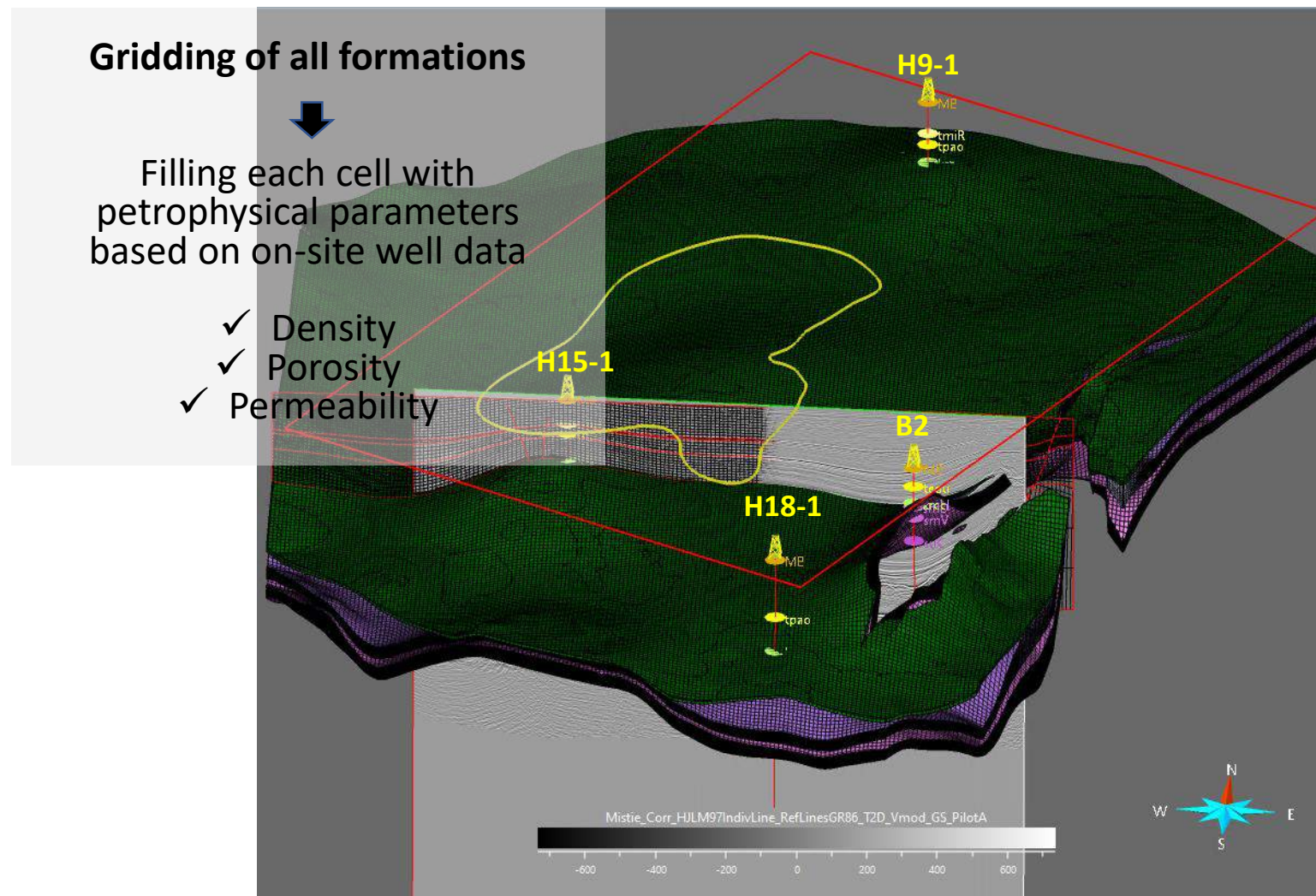# Pilot area A: Data base = 4 wells, 2D seismic

Pilot area A: Structural Model

Mid Miocene Unconformity

Base Palaeocene and Oligocene

Base Lower and Upper Cretaceous

Base Muschelkalk

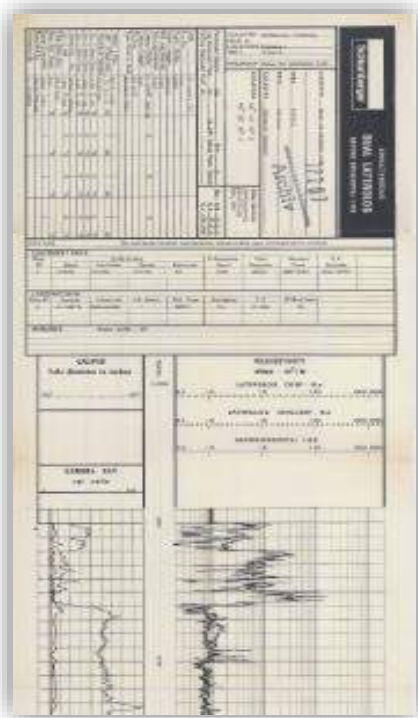**Base** of 6 Buntsand-stein formations

Base Zechstein

Pilot area A: Volume model

Gridding of all formations

Filling each cell with petrophysical parameters based on on-site well data

- ✓ Density
- ✓ Porosity
- ✓ Permeability

Log processing and parametrization
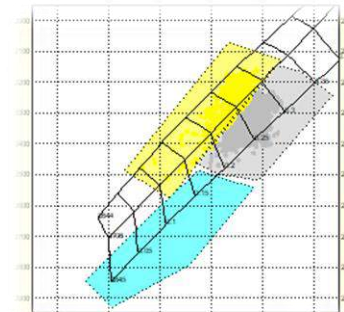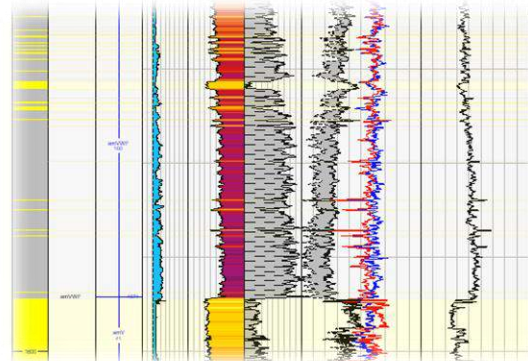

Access and collection of logging data

Digitization and Homogenization

Log-processing and QC

Parameter estimation

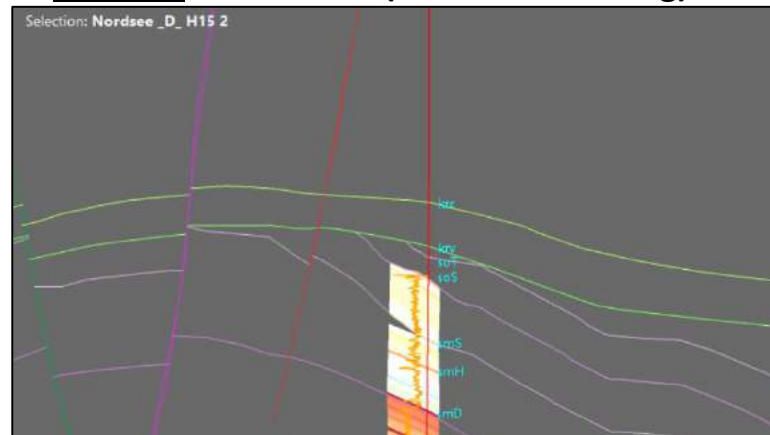**Deterministic workflow in Paradigm™ Geolog**

Shale Volume

↓

Porosity

↓

Permeability

Pilot area A:
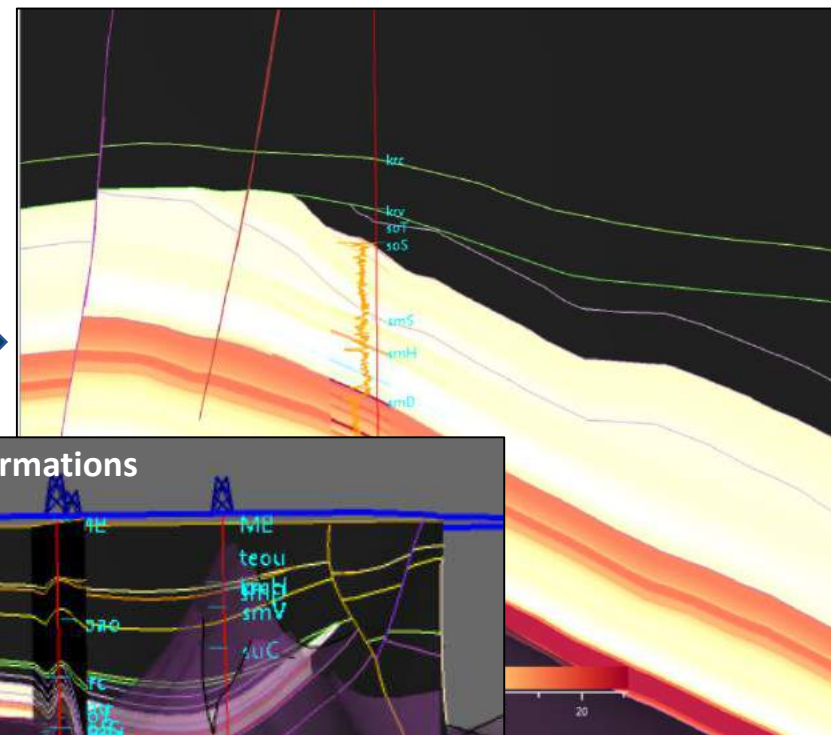## *Model parametrization workflow Geolog / Skua-GoCAD*

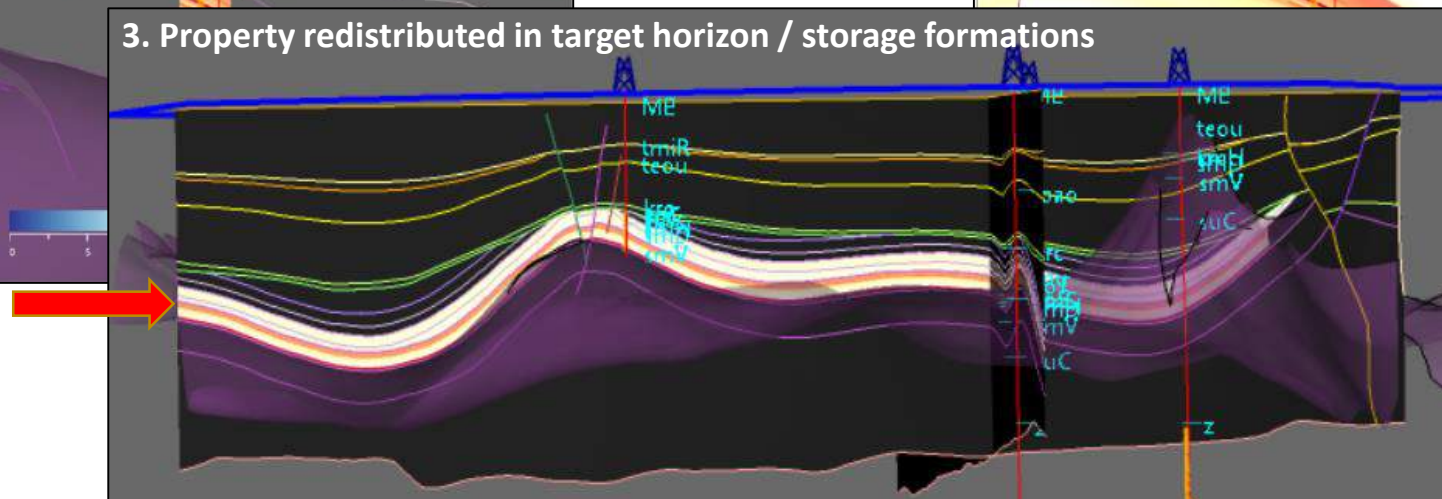**1. Blocking of well data (hard conditioning)**

Selection: Nordsee _D_ H15 2

Spatial/Lateral population

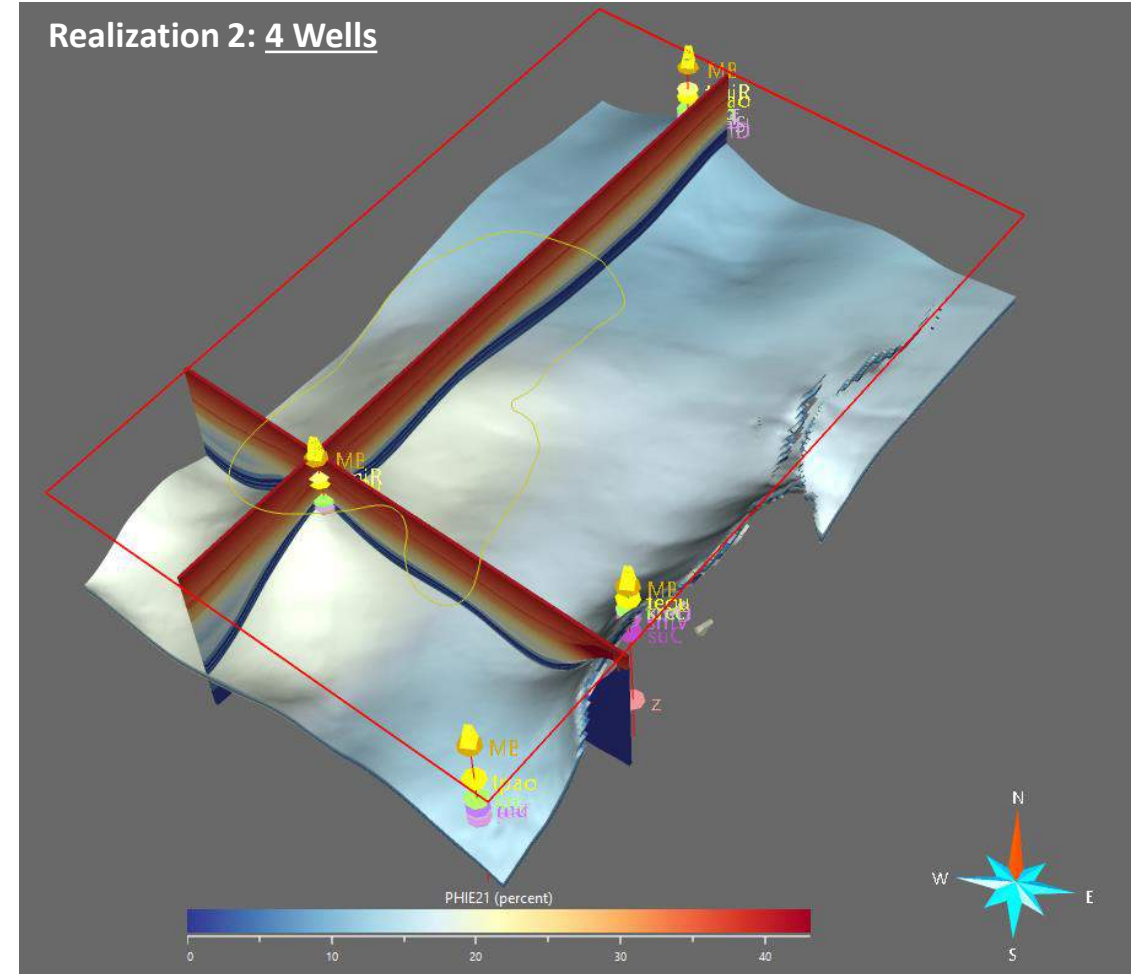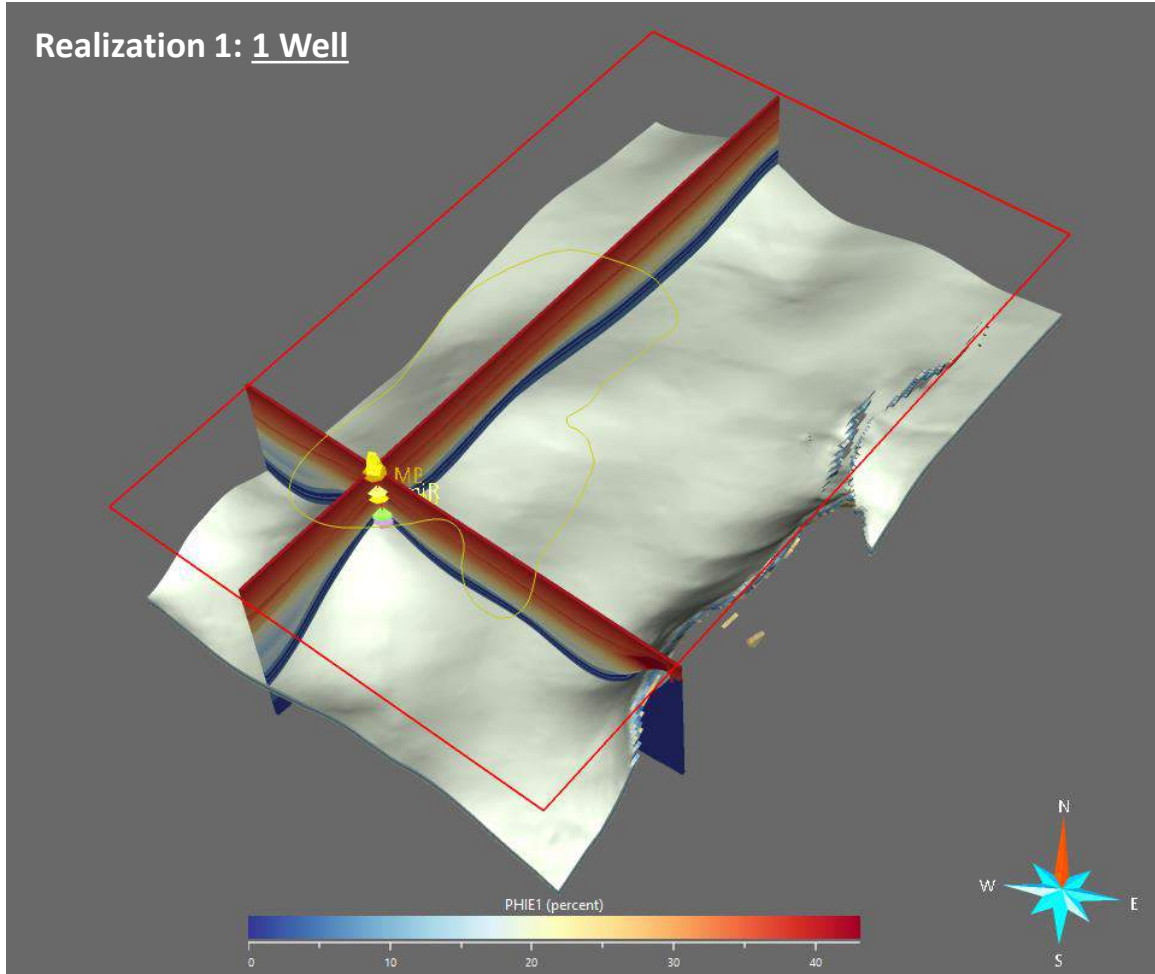**2. Filling of blocked data in space (parameter redistribution)**

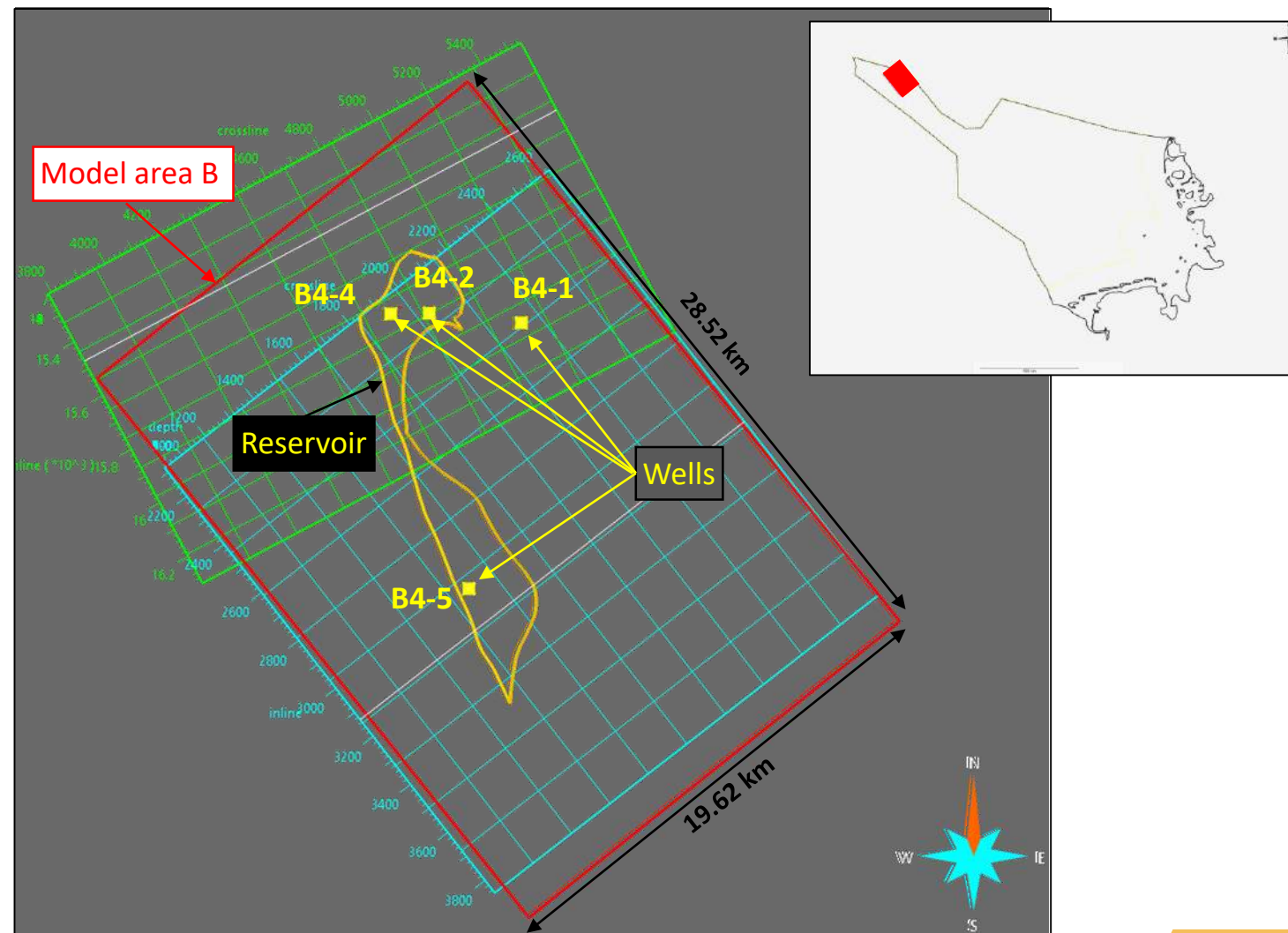**3. Property redistributed in target horizon / storage formations**

Pilot area A:
Model parameter redistribution
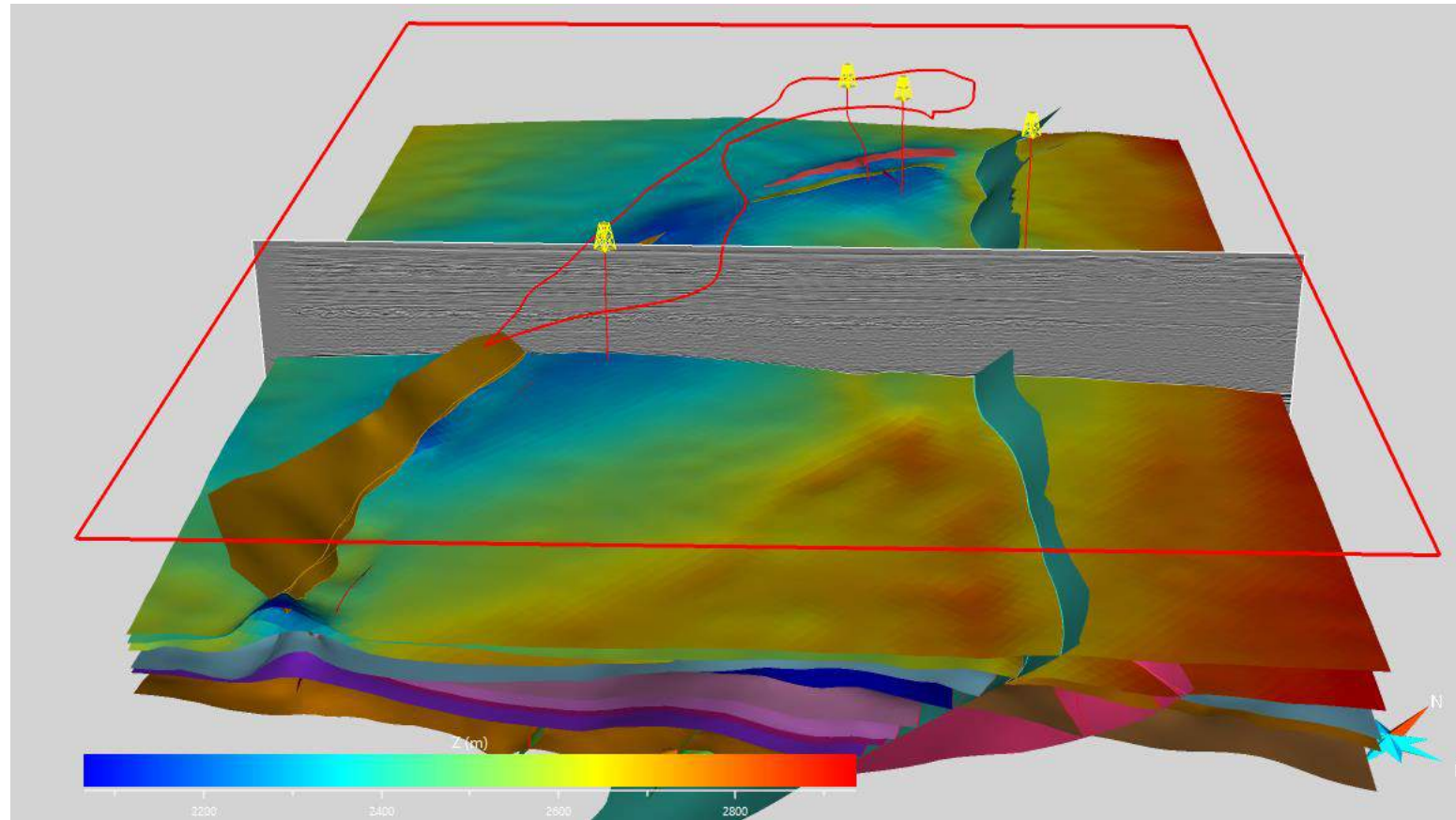

Realization 1: 1 Well

Realization 2: 4 Wells

Pilot area B: Data basis

❖ Four wells
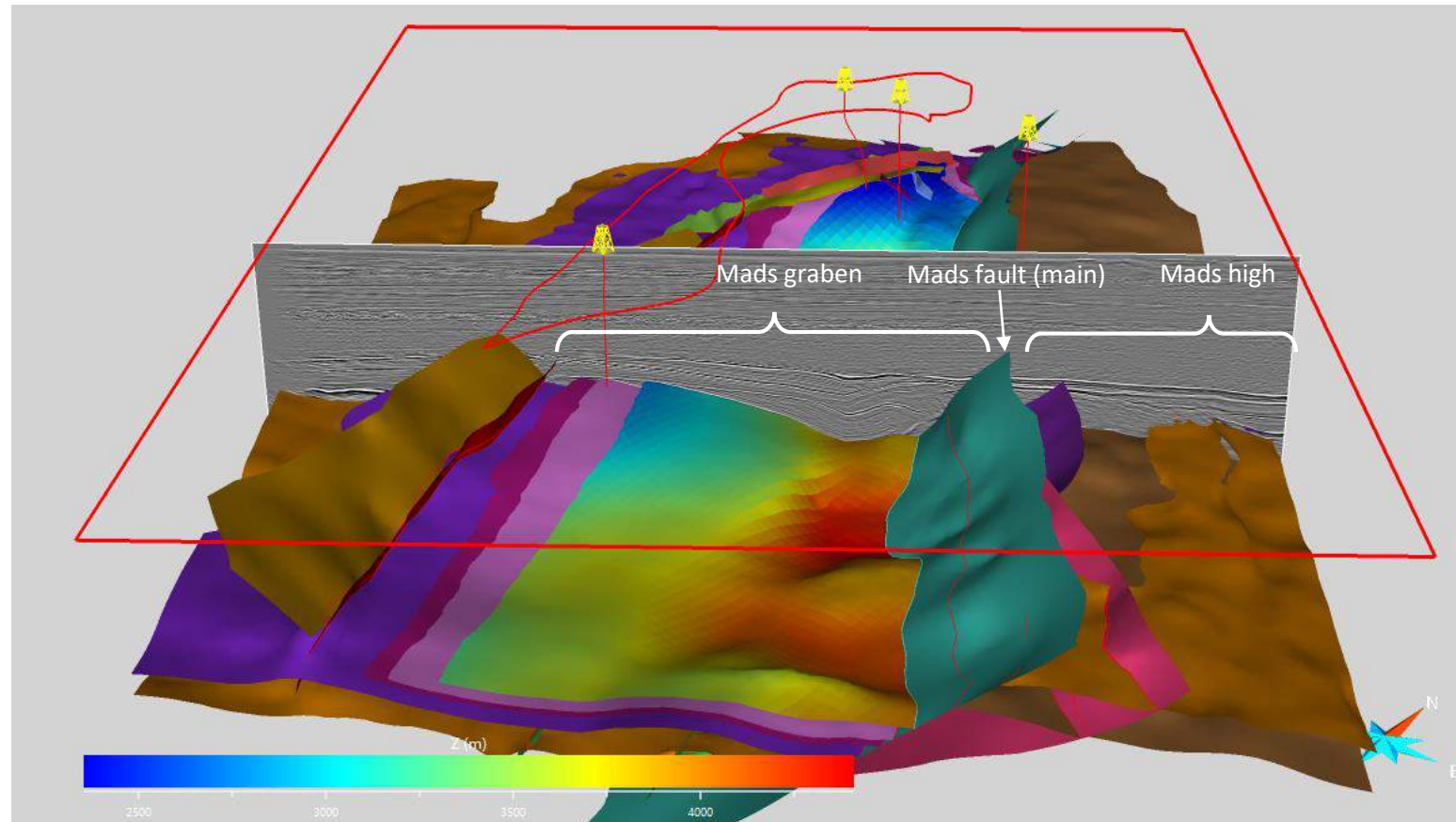❖ Two 3D-seismic cubes
❖ Core data!

Pilot area B: Structural Model

Base Paleogene

Base Lower and Upper Cretaceous

Base Lower and Upper Jurassic

Base Muschelkalk

Base of 3 Bunt-sandstein form.

Base Zechstein

Sedimentary Basement

Pilot area B: Structural Model

Mads graben   Mads fault (main)   Mads high

Base Muschelkalk

Base of 3 Bunt-sandstein form.
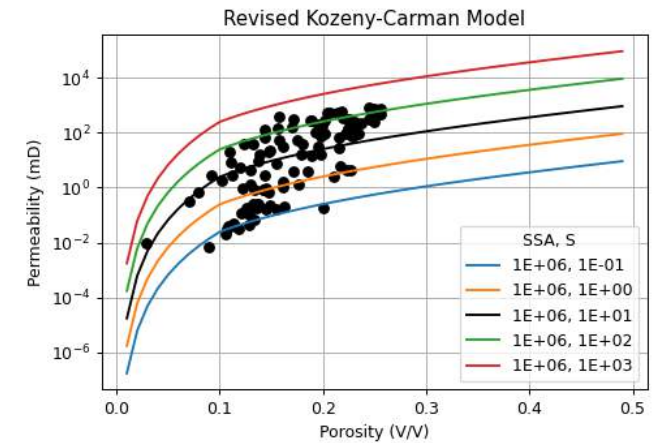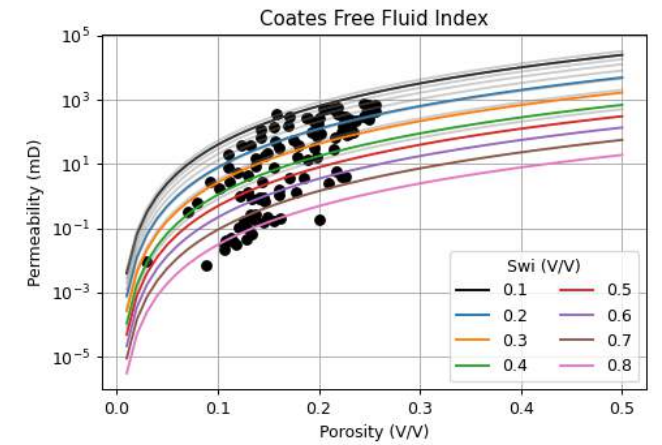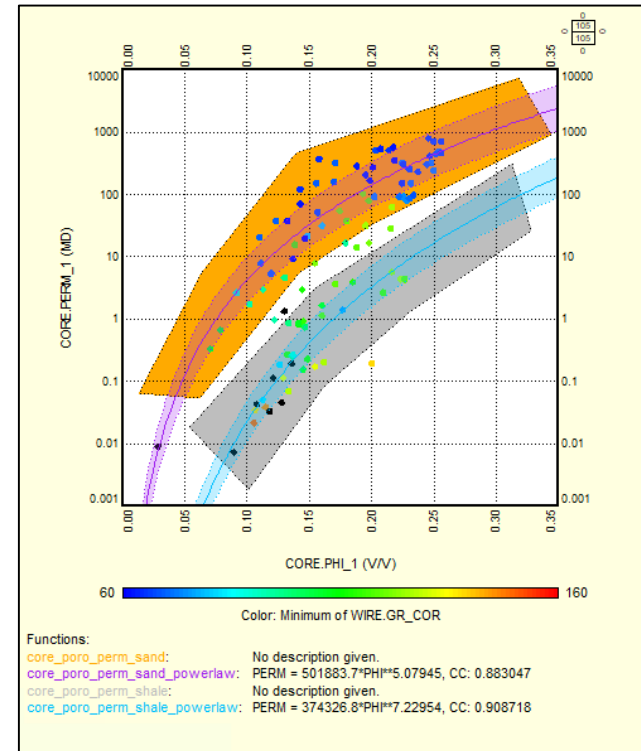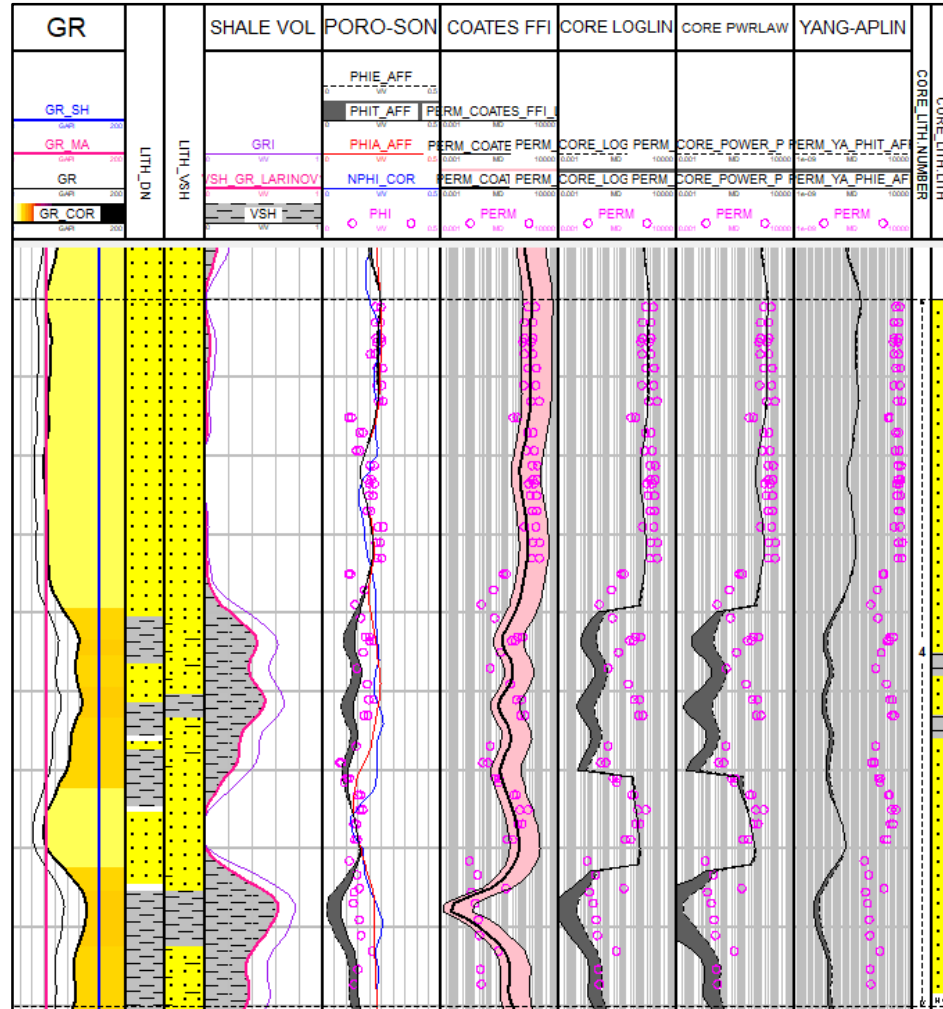
Base Zechstein

Sedimentary Basement

Pilot area B: Volume Model
Work in progress
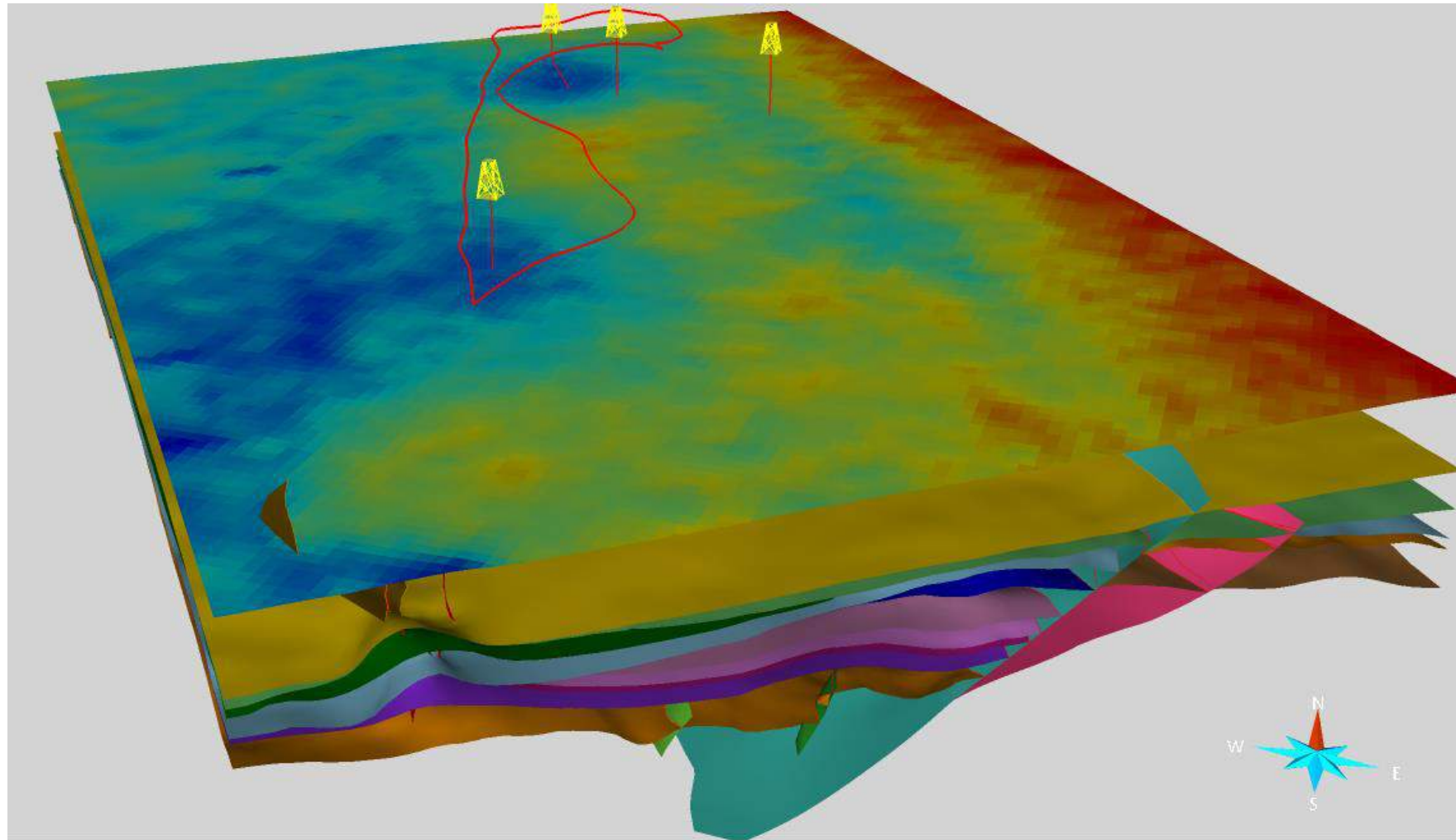
Pilot area B:
Deterministic processing and model parametrization

AP2.3: *Numerische Simulation der CO2-Speicherung in ausgewählten Gebieten*