

A sustainable path to green energy

Characterization of glacial features for the offshore wind farms, North Sea



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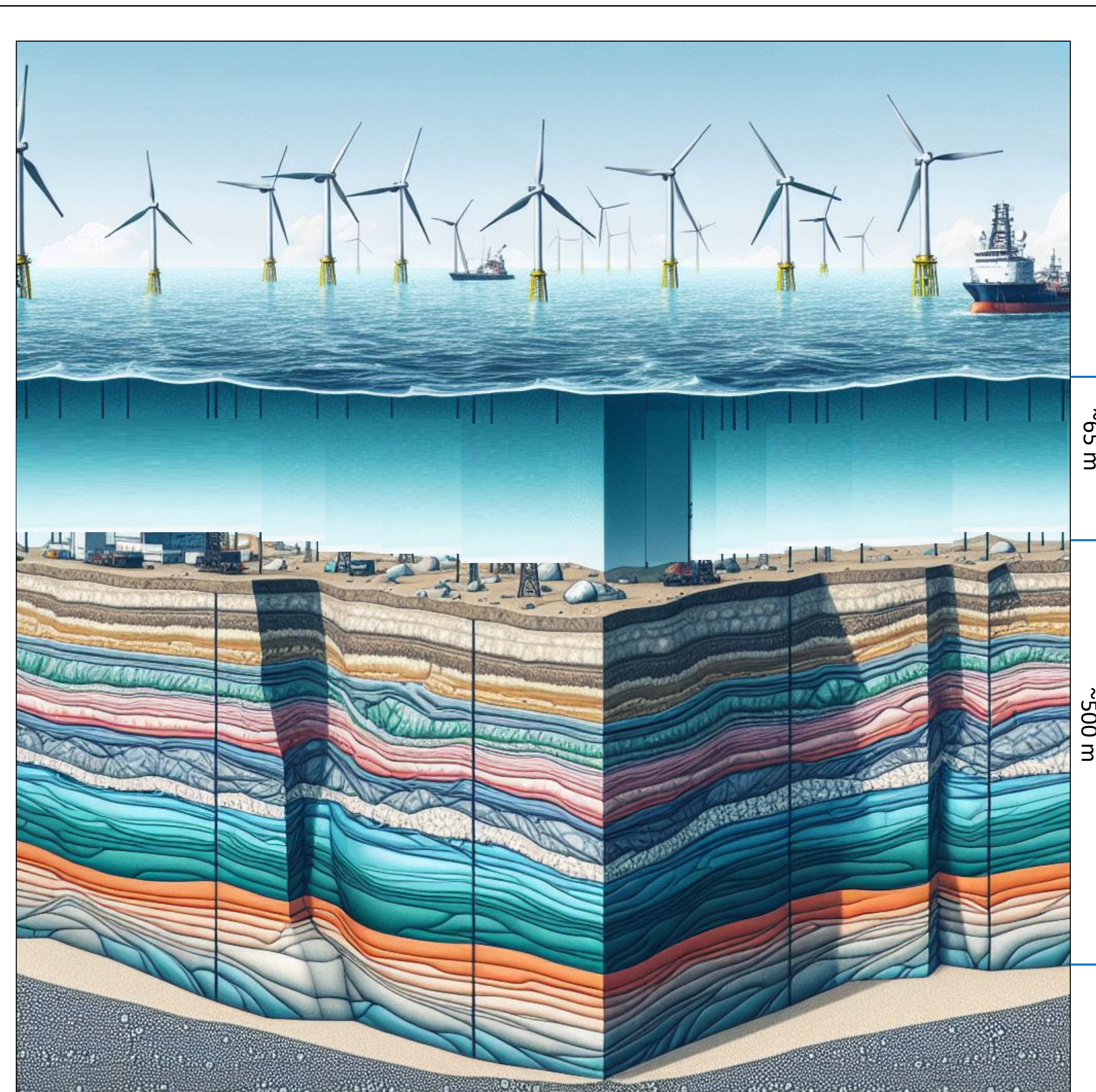
Department: Earth Science

Background and motivation

I am a geoscientist focusing on energy transition/sustainable energy value chain for a greener Earth. To achieve the UN Sustainable Development Goal (SDG) SDG7 (affordable and clean energy), we need to remove the carbon intensive energy. This project help us to achieve that by introducing the cost-reduction solution on development of offshore wind farm sites. I found this project as an excellent opportunity to develop myself by integrating offshore wind research with the geological CO₂ sequestration (CCS) knowledge gained from my PhD research.

Project description

Harness the sustainable offshore wind energy from the Norwegian Continental Shelf (NCS) and adjacent coasts of the northern United Kingdom and Ireland safely and cost-effectively and connect to the EU power grid.



Aims

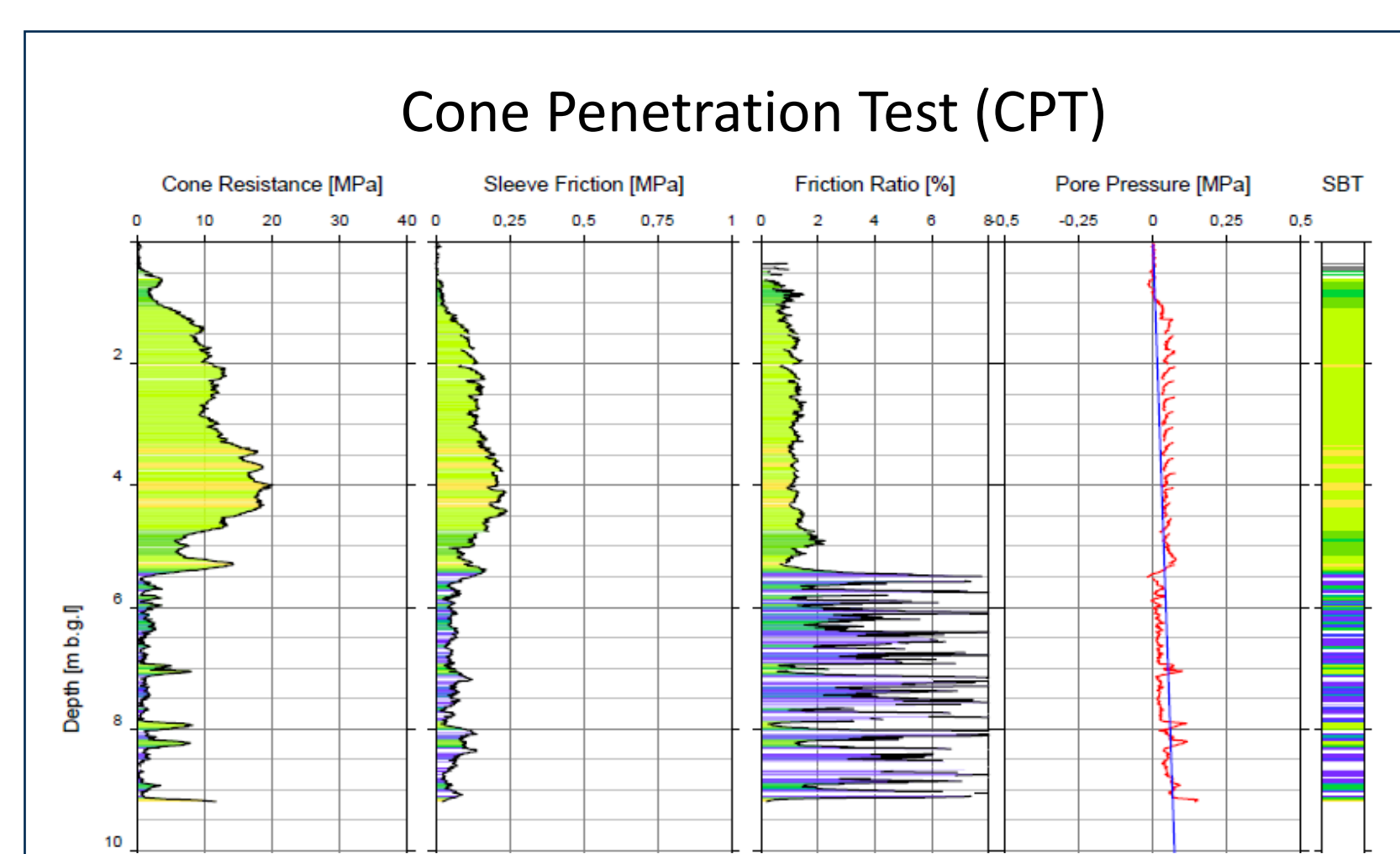
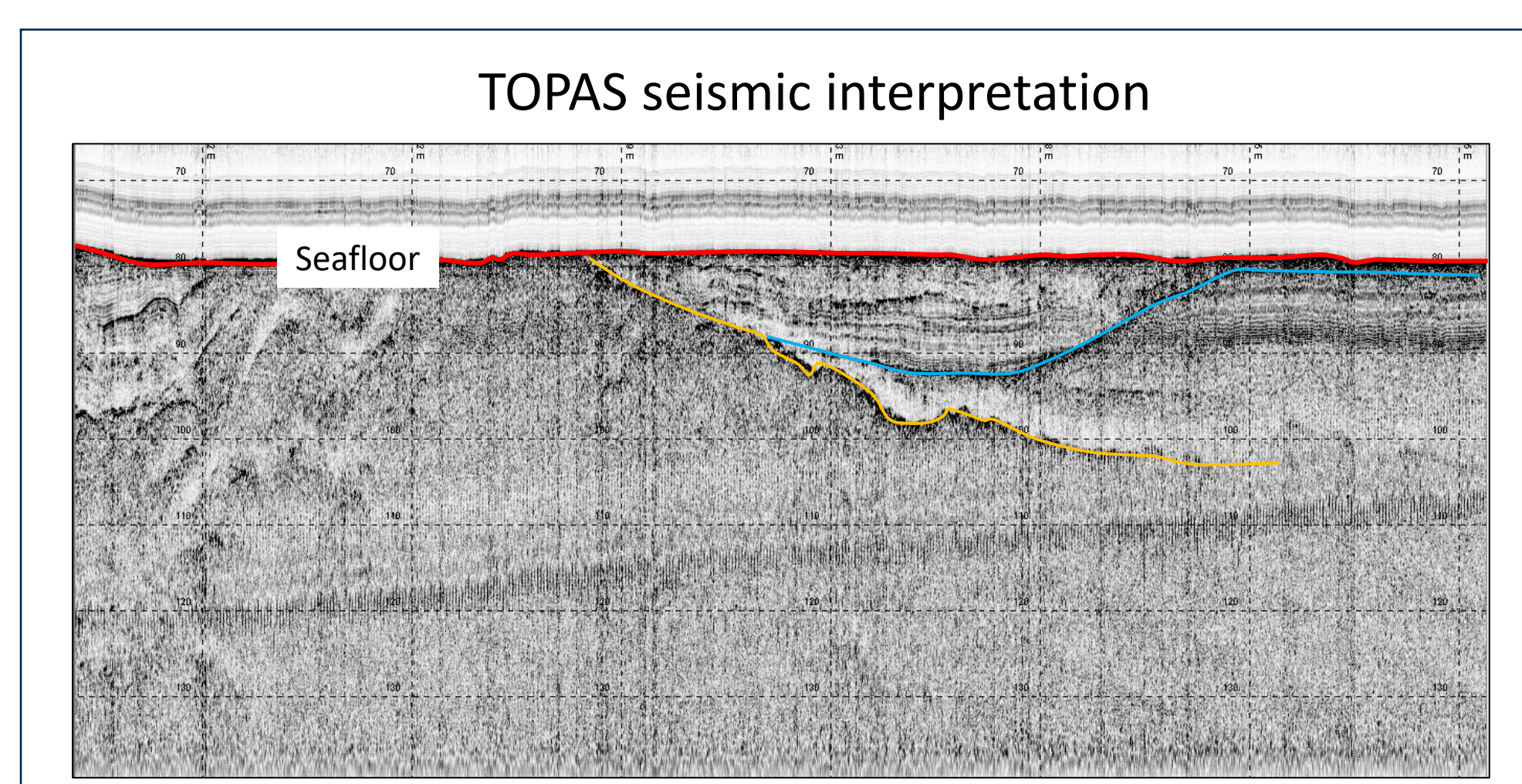
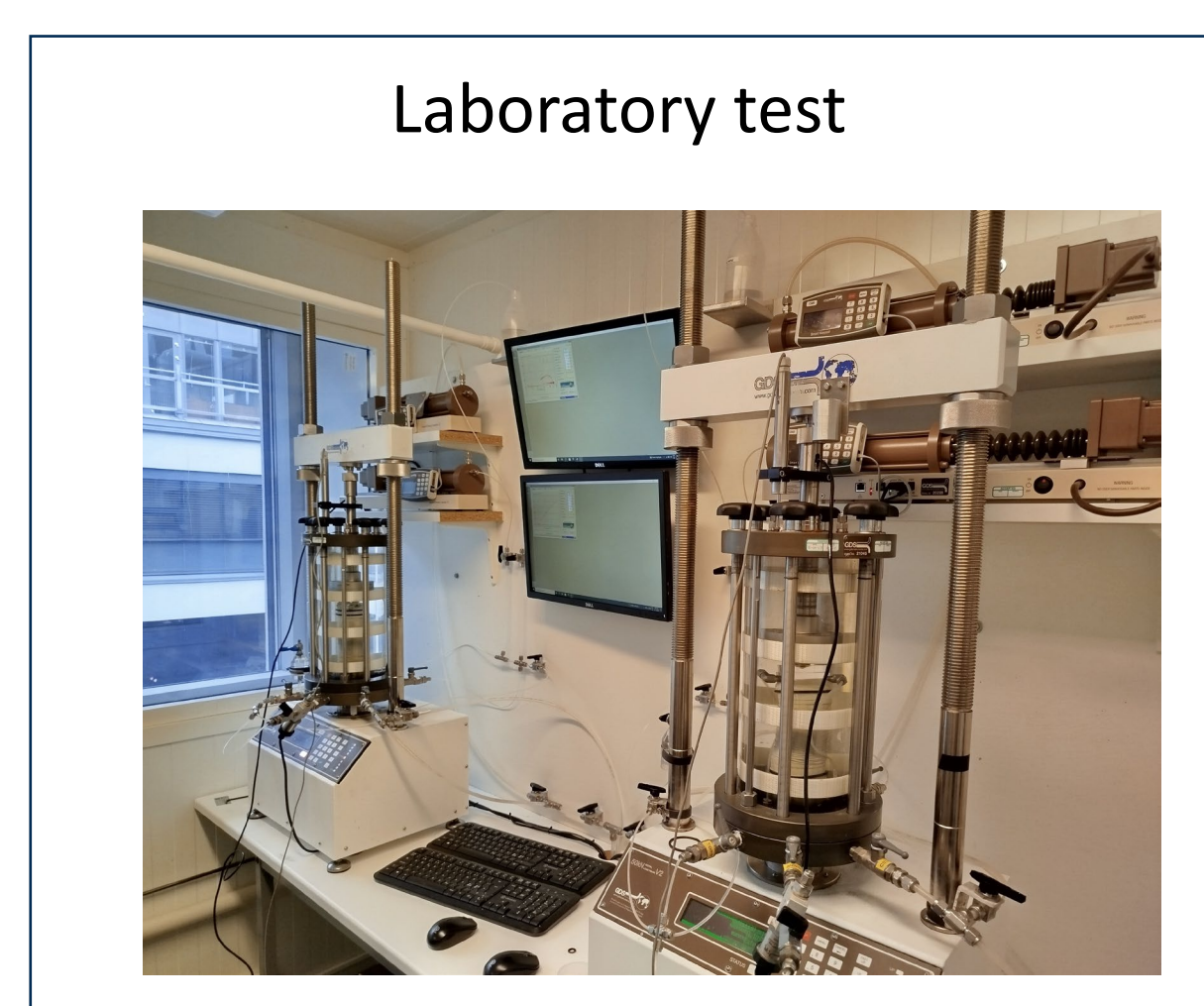
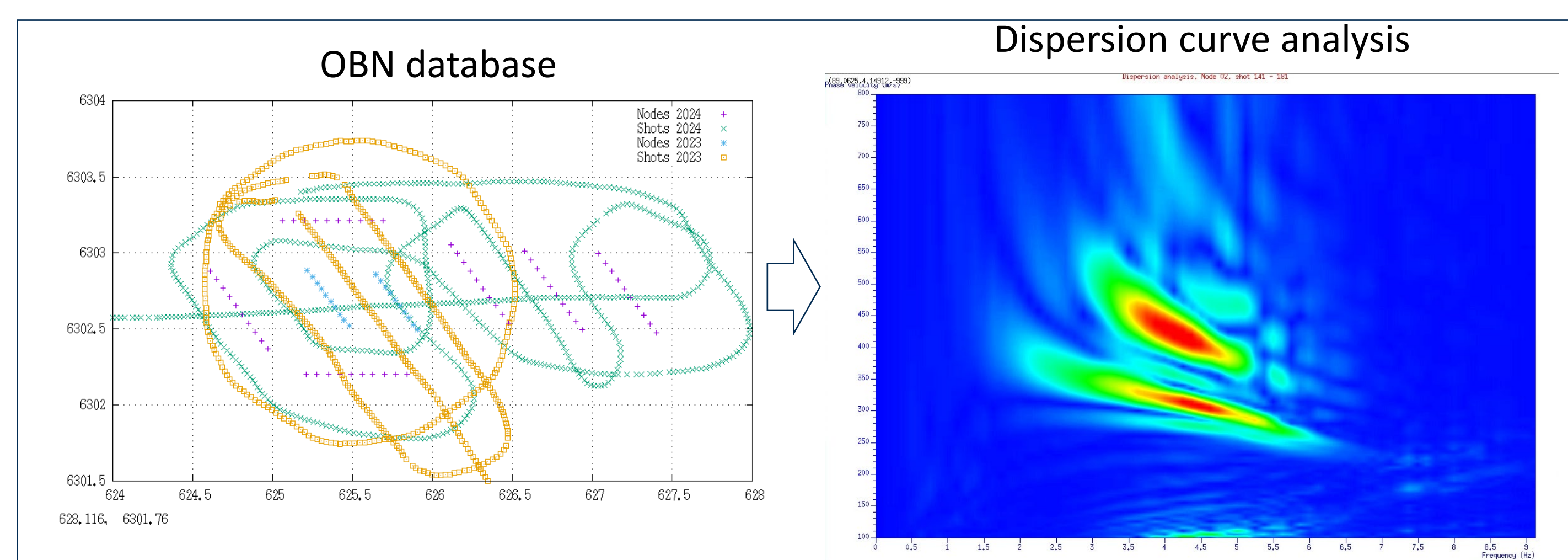
- NCS geological and geotechnical ground models.
- Suitable anchor solutions.

Main questions

- How laterally and vertically variable the marine soils are?
- How can we improve the marine soil geotechnical properties cost effectively?
- How can we improve the offshore wind anchoring issues?

Figure 1: AI generated schematic illustrates the complex soil condition below the sea floor which needs to evaluate using integration of available databases

Work in Progress



Highlighted activities:

- Research cruise in southern North Sea
- Workstation interpretation
- Conferences:
 - Energy transition
 - GET2024
 - Vinterkonferencne25

Integrating geology, geophysics and geotechnical results, the geotechnical ground model will be generated for cost effective and efficient anchors.

Supervisory team

Prof. Christian Haug Eide (Main Supervisor), Department of Earth Science/University of Bergen

Dr. Jo Brendryen (Co-Supervisor), Department of Earth Science/University of Bergen

Prof. Hafliði Hafliðason (Co-Supervisor), Department of Earth Science/University of Bergen

Prof. Sebastian Krastel (External Supervisor), University of Kiel/Germany



SCAN ME

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