



Petroleum Geosciences

Department of Petroleum Engineering

Research projects

University of Stavanger

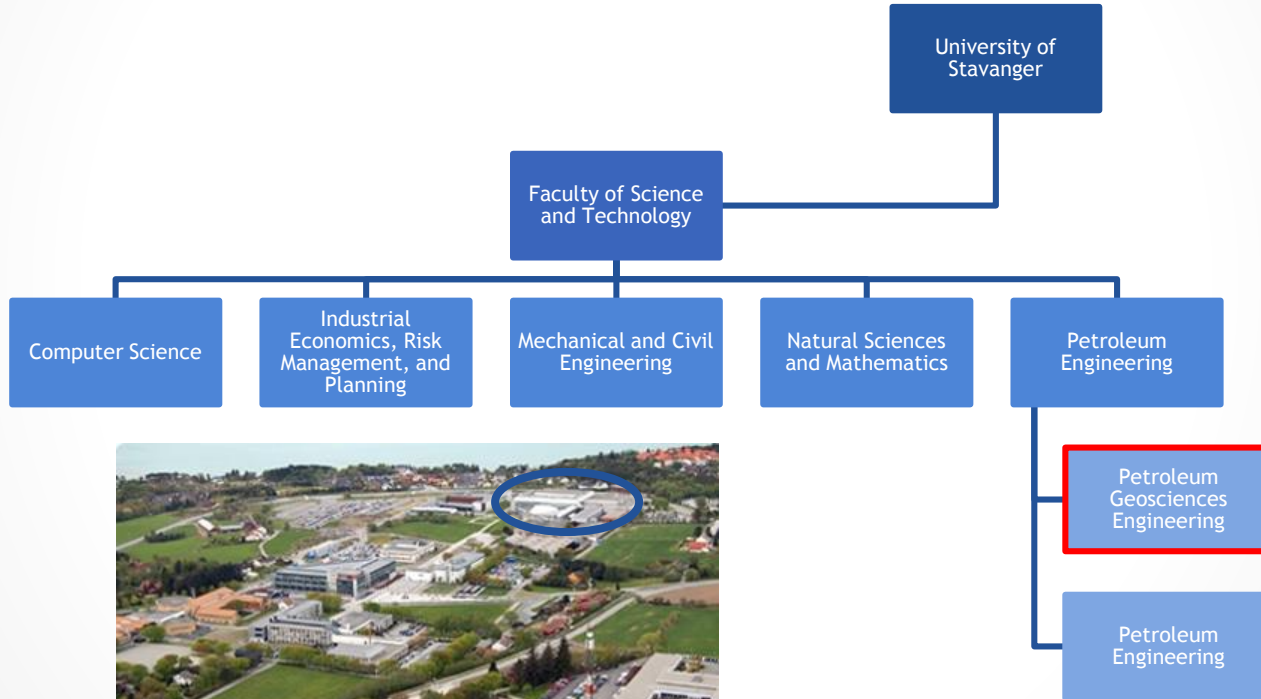
uis.no

2/4/2016



University of
Stavanger

Petroleum Geosciences Engineering



Faculty: An International Community



- Permanent staff
- Adjunct prof.
- Post-doc & PhD
- Temporary staff



Research areas

- Regional to reservoir scale studies: subsurface interpretation
- Provenance and reservoir quality
- Geophysics
- Geomodeling
- Structural modeling
- Integration between geosciences and engineering



Laboratories

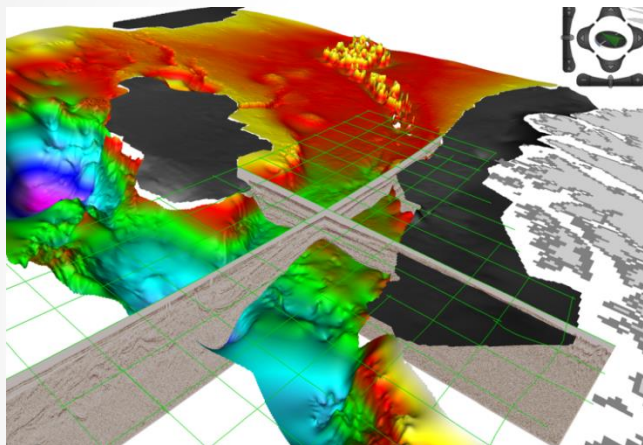
- > 80 workstations with access to software and data (e.g. Petrobank)
- LiDAR and drones
- Microscopes
- Thin section, mineral separation, etc.
- X-ray diffraction



Lower Cretaceous Basin Studies in the Arctic (LoCrA)

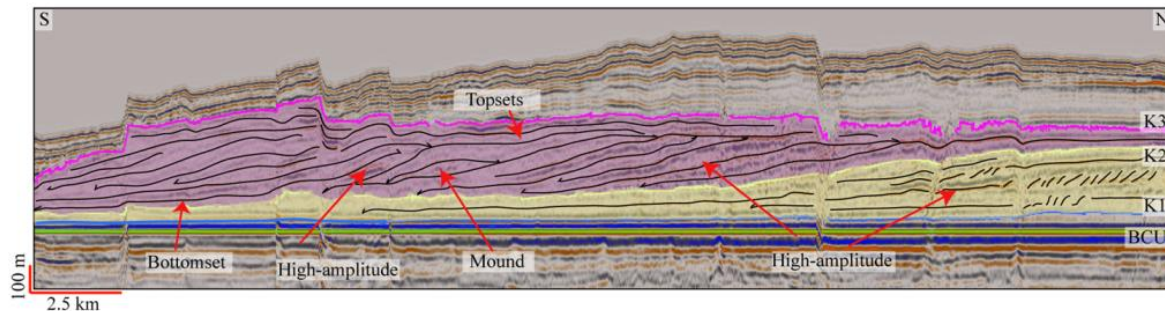
Alejandro Escalona. UNIS PI: Snorre Olaussen

UiS and UNIS in cooperation with UTIG, UiO, UiB, UiT, MSU, GEUS, UCPH



Main project goal: to improve the basin configuration and fill of the Lower Cretaceous basins in the high Arctic as input to predict coarse-grained siliciclastic wedges as plays on the Norwegian Continental Shelf.

The project was promoted via FORCE in 2012.
It now has 21 industry sponsors.



<http://locra.ux.uis.no/>

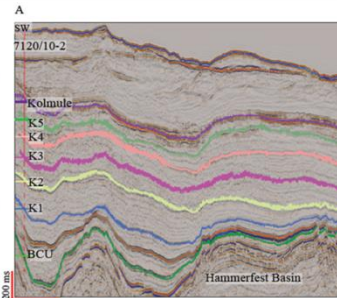
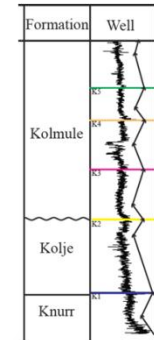
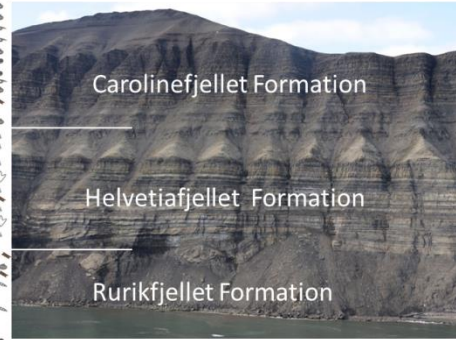
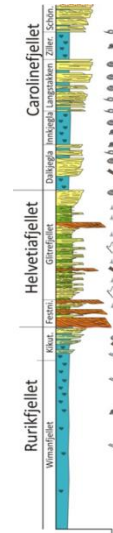
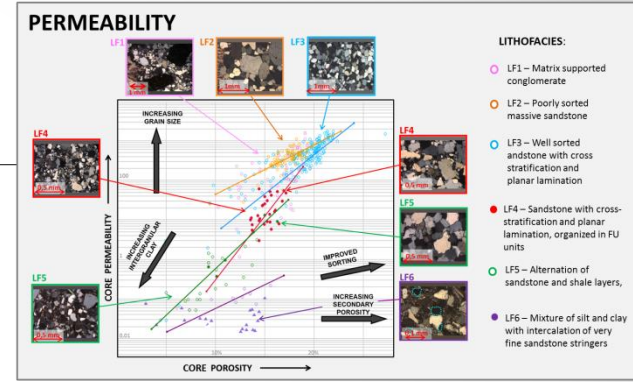
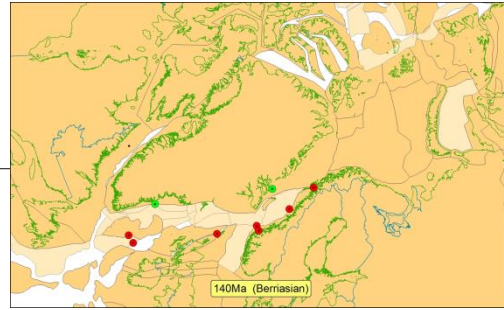


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LoCrA

Activities:

- Plate tectonics
- Biostratigraphy
- Provenance
- Regional interpretation
- Reservoir scale
- Outcrop analogues



The Low Frequency Project

Escalona, Weibull, and Brown

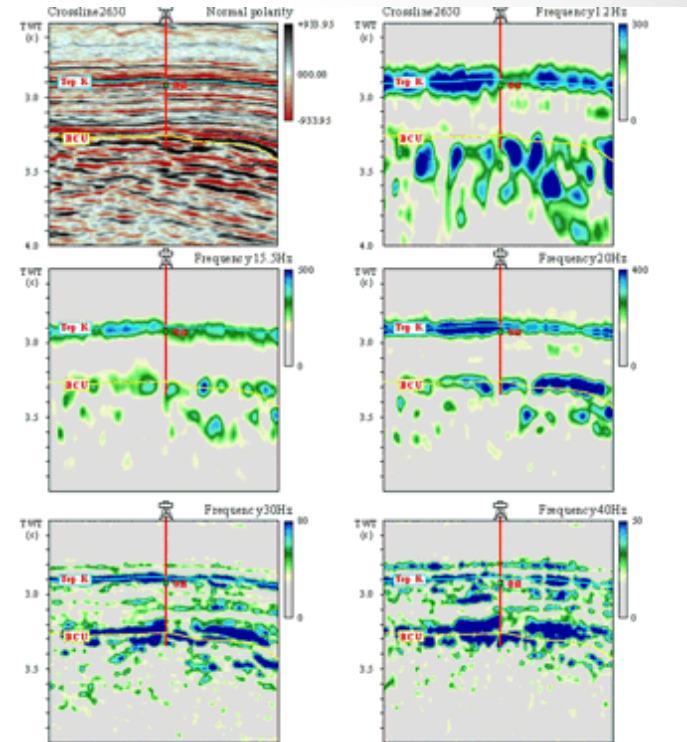
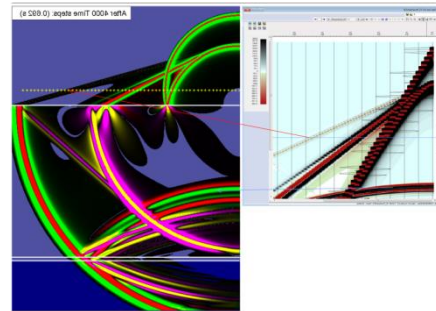
UiS, UH, U. d'Avignon, LMA



Project goal: to improve our knowledge from the mathematical, physical, numerical, and applied points of view on how the low frequency content of industry 3D seismic reflection data can be used as a hydrocarbon indicator for exploration and production purposes

3 industry sponsors

<http://lowfreq.uh.uis.no/>



Seismic Imaging of Fault Zones

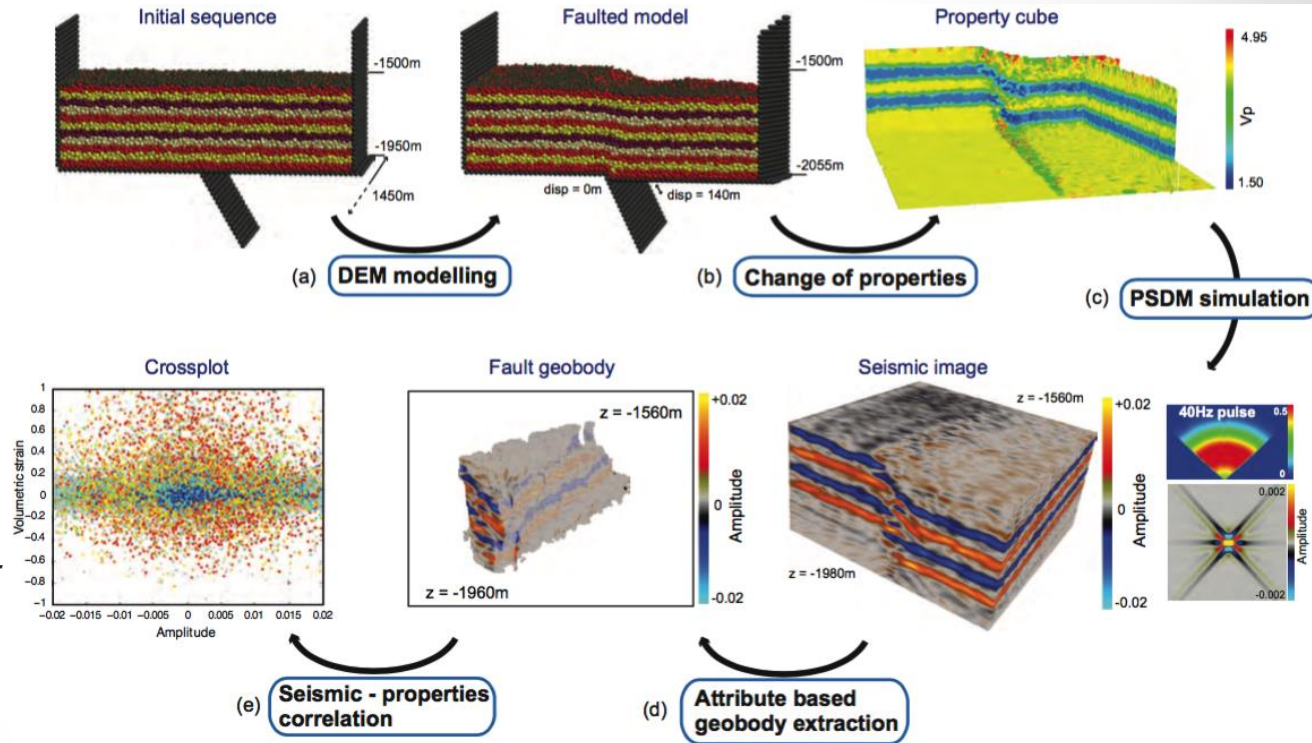
Botter and Cardozo

UiS, NORsAR, U. Barcelona, UiB, fFA

Main project goal: to study fault-related deformation and its impact on seismic, as well as seismic acquisition and processing parameters, to image fault zones.

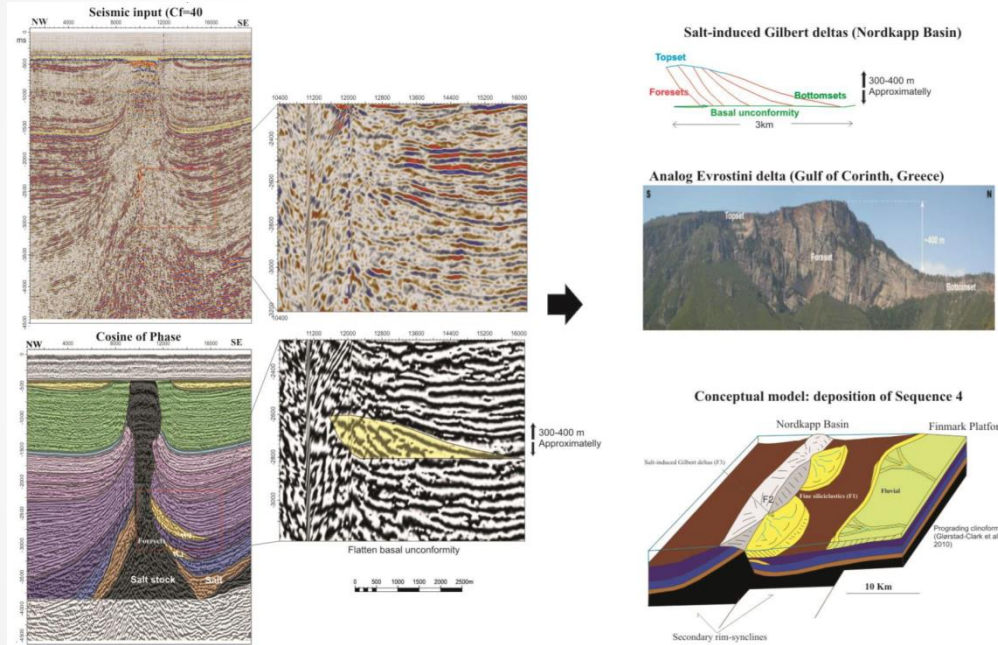
Ongoing NFR project

Looking for sponsors for a second phase



Impact of salt movement on the Triassic Nordkapp Basin

Cardozo and Escalona



Main project goal: to understand the impact of salt evolution on the Triassic in the Nordkapp Basin

KD PhD

Looking for industry sponsors to support field activities or collaborate with data



Some new projects of relevance to industry



Norwegian Barents Sea multi-well QEMSCAN (QS1) stratigraphy/provenance/engineering/drilling study

C. Augustsson, A. Escalona, H. Hodne, P. Nadeau, T. Puntervold, S. Strand

Project goals: Train Engineers & Geoscientists to create an integrated multi-well database, characterize basin-fill geohistory, tectonic evolution, provenance and drilling records for key Barents Sea/NSC wells, develop wellsite support for cutting analysis to increase drilling efficiency, safety and environmental performance.

Partners: FEI, Heavy Mineral Research Associates/University of Aberdeen, Arkadia GeoScience AS, & Well Logging Services candidates, NPD-Well cuttings/cores.

Seeking support for Analytical facilities, Research assistants, MSc/PhD projects, 10-20 candidate wells, 5-10k samples.

See poster & project link:

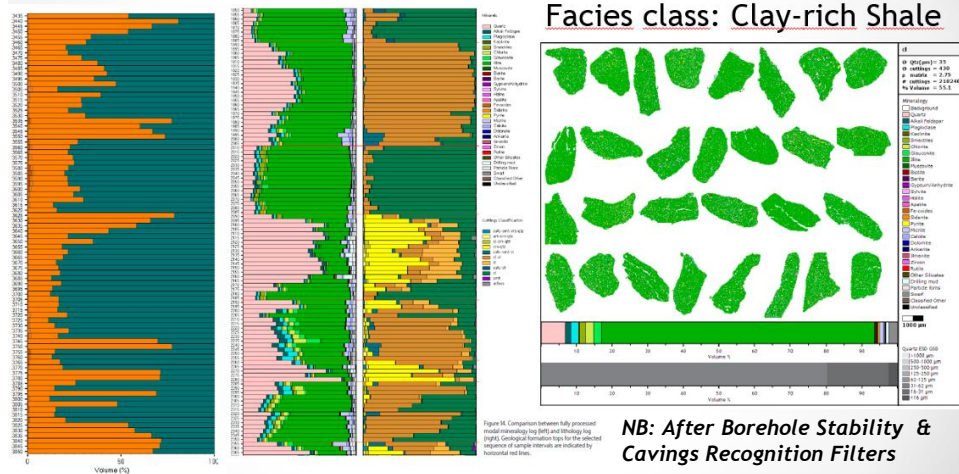
<http://force.org/en/IE/Project-groups/Projects---Improved-Exploration---overview/>



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Report Formats: Drilling Components Mineralogy, Facies & Petrophysics



UiS QS1 Consortiun Partners:
FEI, Arkadia GeoScience AS
Heavy Minerals Research Associates
University of Aberdeen

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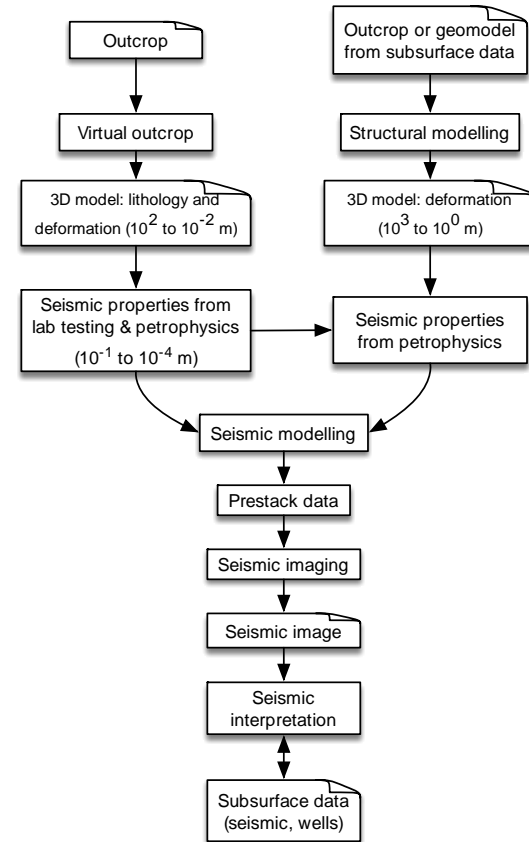


Subsurface Fault Imaging Training - SURFIT: Iacopini, Cardozo

U. Aberdeen, NOR SAR, UiS, U. Barcelona, Uppsala U.,
CIPR, U. Roma, U. Tel Aviv, ffA, MVE, UiO

Aim: Improve our capacity to image subsurface fault-related deformation and train professionals skilled in innovative technologies that enable subsurface fault structure imaging, visualization and interpretation beyond the current state-of-art.

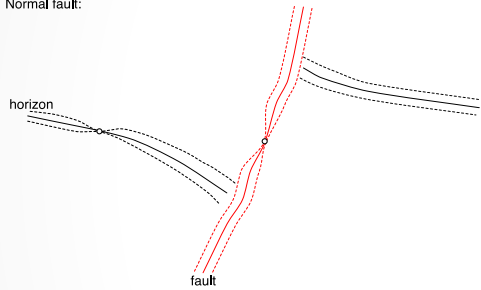
This proposal has been submitted to EU-ITN. We are looking for industry partners who can fund activities or contribute with training or data.



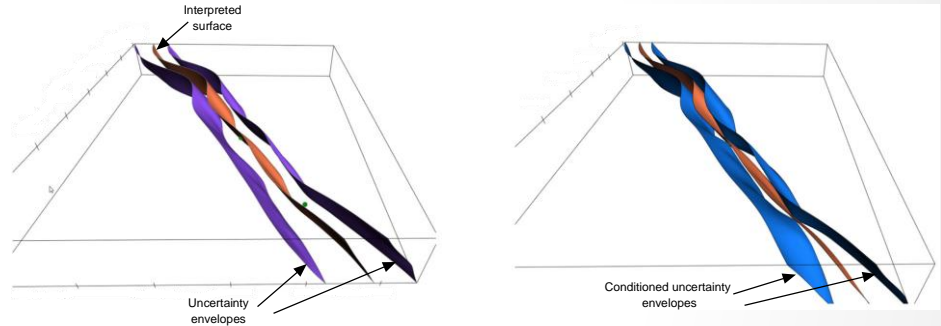
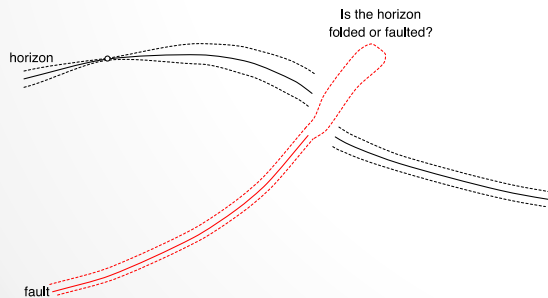
Quantifying uncertainty through structural modeling: Cardozo UiS, NR, U. Nancy

Aim: Develop a functional tool in Havana to quantify structural uncertainty by combining uncertainty modeling (horizons and faults) and structural modeling (optimized inverse kinematic modeling).

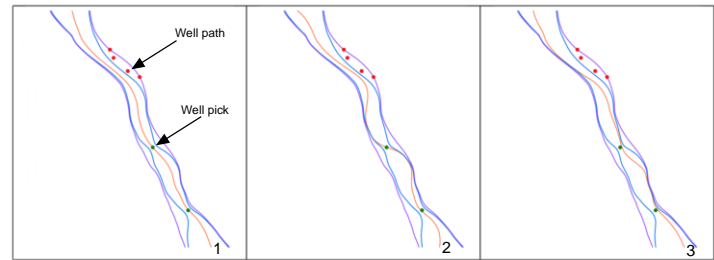
Normal fault:



Reverse fault:



Realisations



To be submitted to Petromaks on September. Looking for sponsors

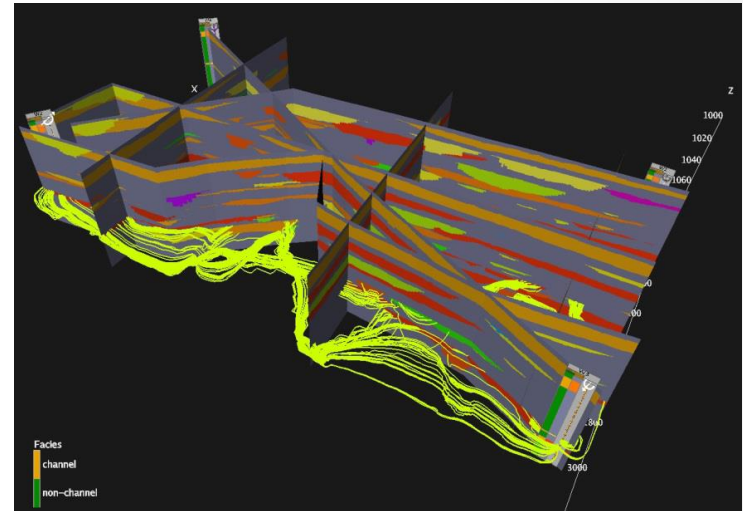


RM3D: Reservoir Modelling: *Description Dynamics Decision*

Townsend, Cardozo, Escalona

Main project goal: to establish a UiS research consortium in geologically-focused reservoir modeling (RM3D). The main focus will be on all aspects of reservoir-scale geology that impact hydrocarbon recovery, using integrated multi-disciplinary approaches and developing efficient workflows.

Seeking industry support for PhDs and establishing a new research expertise



Ecosystem services: Value and uncertainty

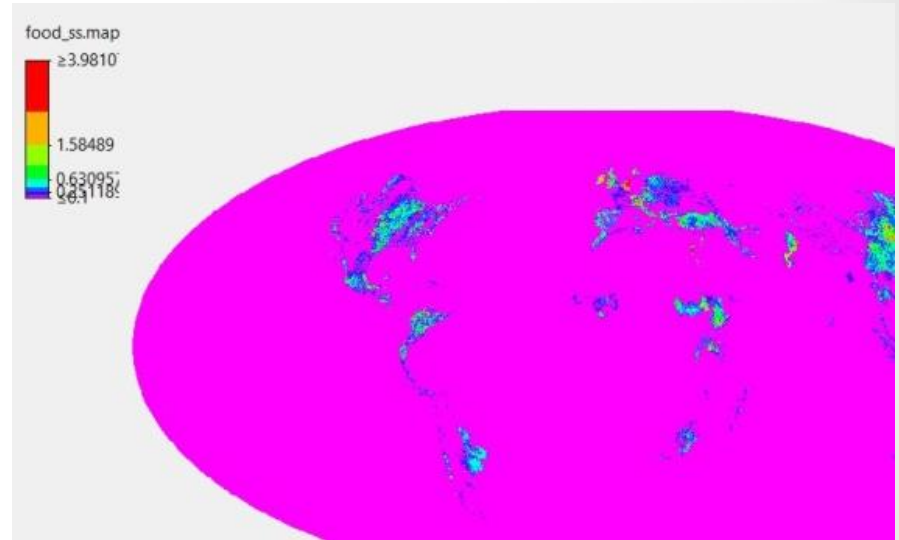
Bingham, Karssenbergh

UiS, Utrecht Univ.

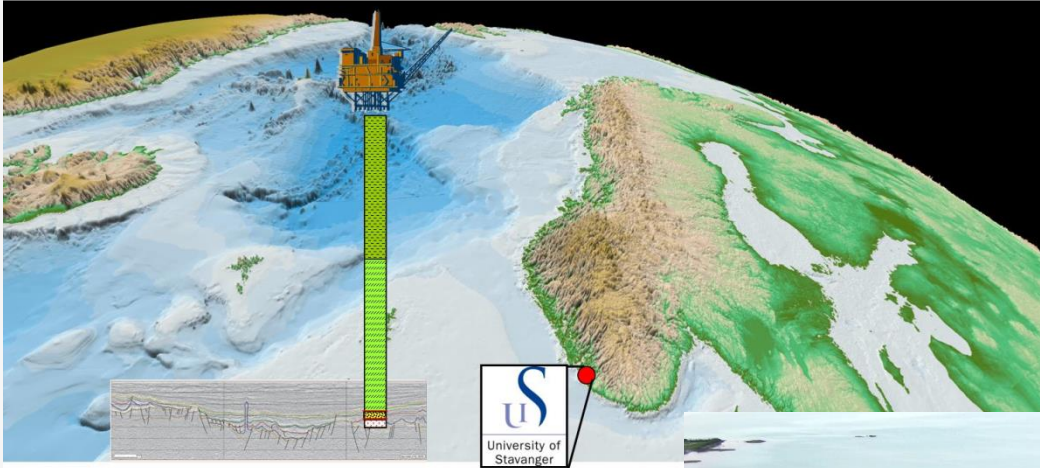
Main project goal: to model the value of ecosystem services on a global scale for onshore and offshore ecosystems, to evaluate uncertainty using error propagation, and to investigate scenarios including hazardous events (e.g. oil spills, flooding) and specific environments (e.g. deltas, watersheds, forests)

Currently, a PhD project of Bingham

Seek industry support for continued research



Thank you for your attention!



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