The CO_2 Storage Data Consortium (CSDC):

CO_2 Data Share

Sharing reference datasets from CO_2 storage projects

Presentation at CLIMIT Summit Side event on CO_2 Storage

US-Norway MoU Initiative

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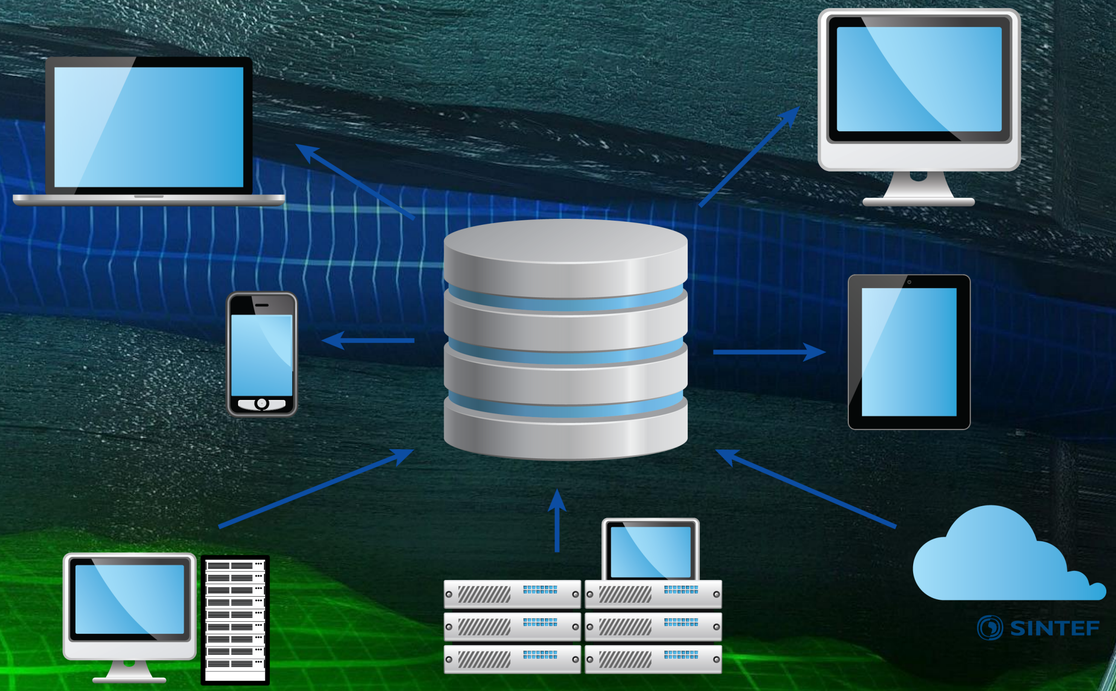
CO_2 Data Share



Enabling data-driven science and innovation by sharing reference datasets from CO_2 storage projects

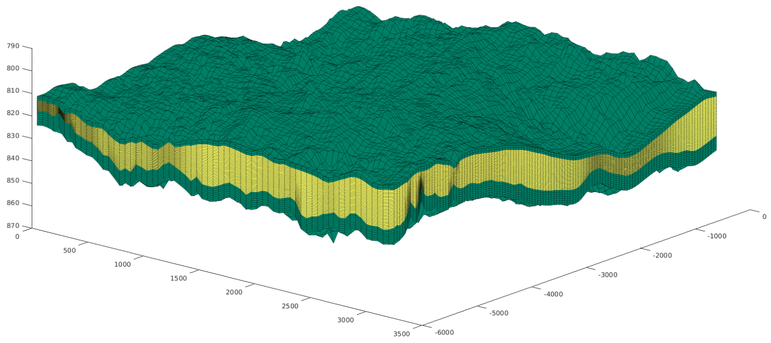
Ill: Equinor

Homogeneous vs. heterogeneous datasets

The 2010 Sleipner Benchmark

(size: 19 megabytes)

- Reservoir simulation grid



Merriam-Webster

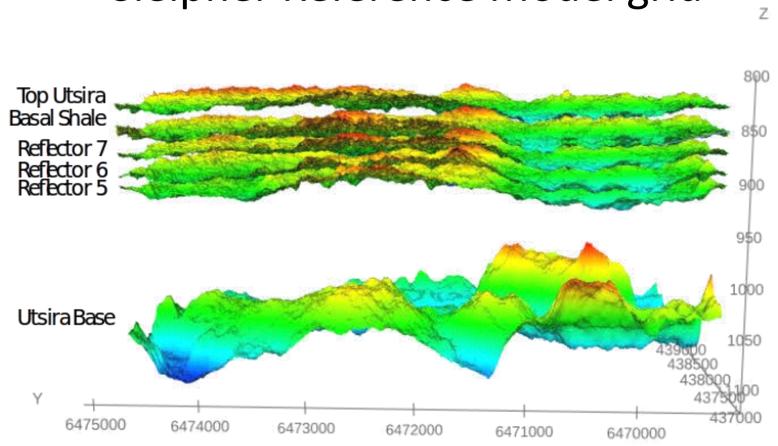
Definition of *metadata*

: data that provides information about other data

The 2019 Sleipner Benchmark

(size: 30 gigabytes)

- Well positions and logs
- Three interpreted horizons
- Processed seismic data
- Velocity model
- Injected CO_2 volumes
- Sleipner Reference Model grid



Landing page - the portal to the data

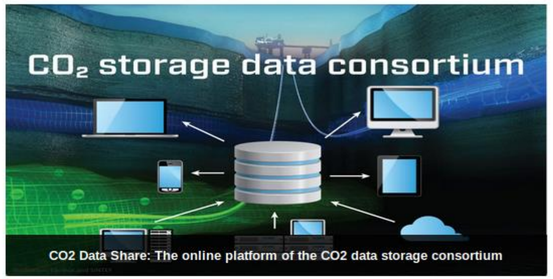
CO2 Data Share

Datasets Organizations

Welcome to CO2 Data Share!

The online platform of the CO2 storage data consortium

This is an international platform for sharing reference datasets from pioneering CO2 storage projects.



Available Datasets

The Johansen Dataset

This dataset contains experimental data from the Johansen formation storage site

Sleipner 2019 Benchmark Model

Data from the 2019 Sleipner reference model

About CO2 Data Share

Language: English

Powered by ckan

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The Johansen Dataset

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OPEN DATA

Dataset

The Johansen Dataset

The Johansen formation is a candidate site for large-scale CO_2 storage offshore the south-west coast of Norway. As part of the MatMoRA project, we have developed a geological model based on available seismic and well data. By publishing this model online, we seek to provide different modeling groups with a real data set that can be used for comparisons and to calibrate and understand the workings of different computational tools.

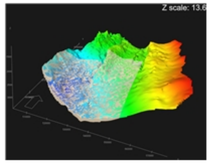
Background

- G.T. Eigestad, H. K. Dahle, B. Hellevang, F. Riis, W.T. Johansen, and E. Øian. Geological modeling and simulation of CO_2 injection in the Johansen formation.

Geometry

Sector models

The simulation grids are made available in corner-point format. This format is an extension of the logical Cartesian grid format. Due to the vertical faulting of geological zones, the corners of grid cells are in general not conforming from one grid block to the neighboring grid block.



The full-field model is discretized by a 149x189x16 grid. This grid describes all zones and the entire lateral domain. The Johansen formation is given by 3 layers.

The sector models correspond to the south western parts of the geological domain. They are discretized by a 100 × 100 lateral grid with three different vertical resolutions of the Johansen formation:

1. Sector5: 5 layers in Johansen, 100 x 100 x 11 [download zip file]
2. Sector10: 10 layers in Johansen, 100 x 100 x 16 [download zip file]
3. Sector15: 15 layers in Johansen, 100 x 100 x 21 [download zip file]

A sector model with heterogeneous rock properties in the Johansen formation is also provided:

1. NPD5: 5 layers in Johansen, 100x100x11 [download zip file]

The shale (Dunlin) above Johansen is represented by 5 grid layers in all sector models. Similarly, there is one shale layer below Johansen in all sector models. The geometry files are offered in two formats: either as Eclipse input files (<modelname>.grdecl) or as separate files for pillar coordinates, corner-point depths, and list of active cells.

Full-field models

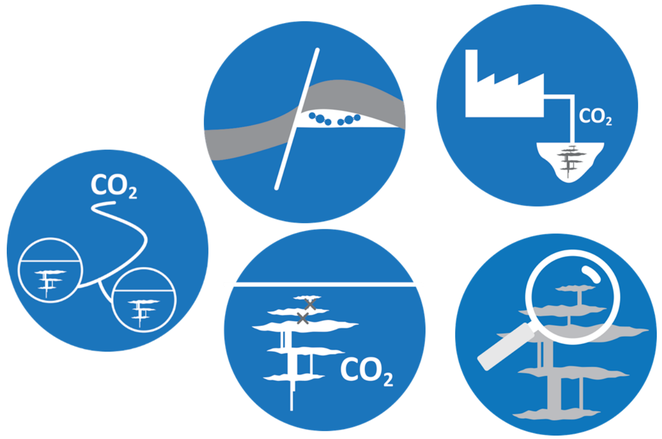
In addition to the four sector models, we also offer a full-field model

1. FullField: 149 x 189 x 16 [text files] [GRDECL file]

CO_2 Data Share
Basic structure

Data users

Developing new knowledge, models, technology from available datasets



Data providers

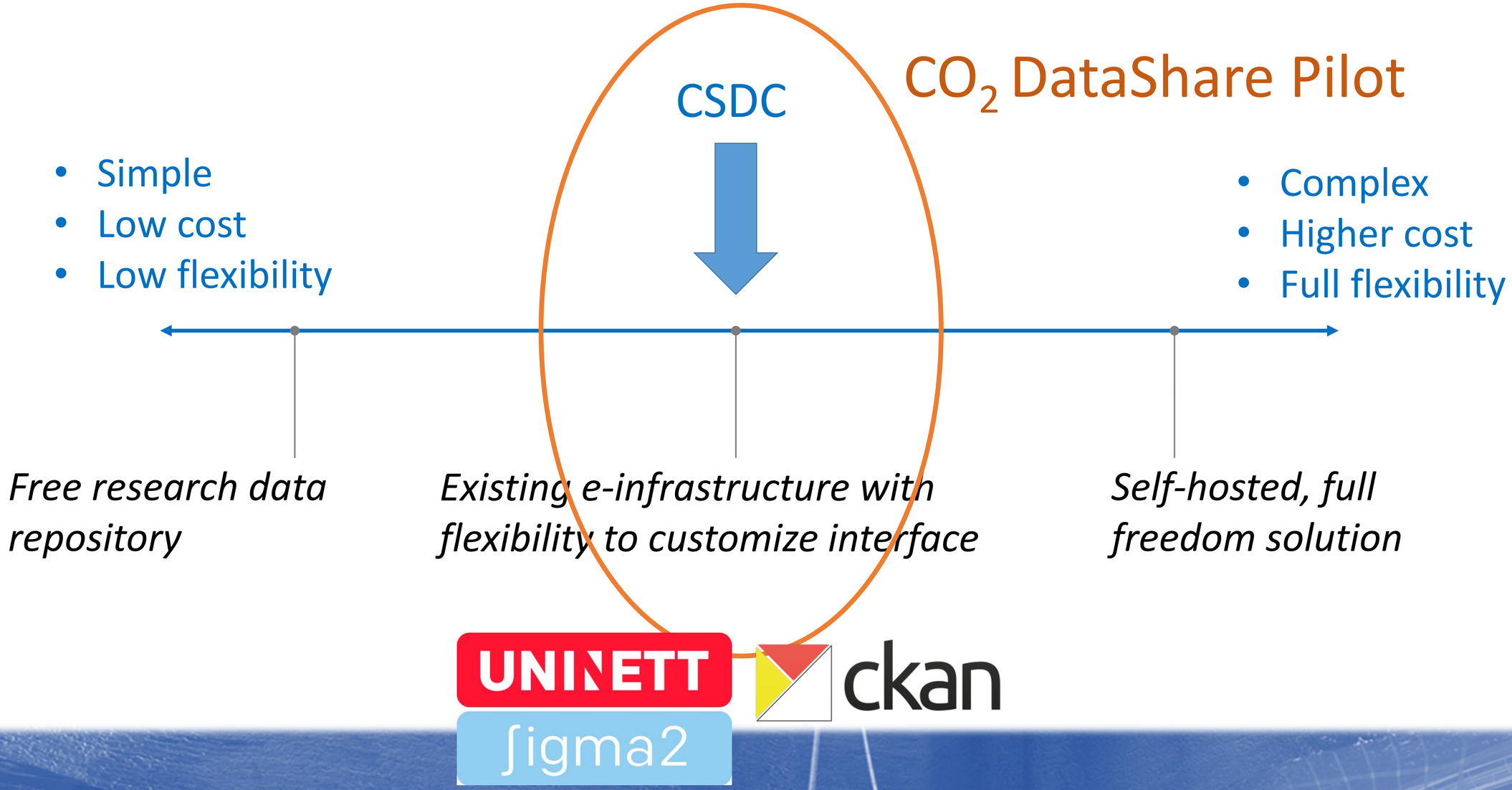
Willing to share data from CO_2 storage projects

CO_2 DataShare
Data preparation

CO_2 DataShare
Tailored portal for accessing data

Sigma2
for hosting of CO_2 storage data

Explored technical solutions for data sharing



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