

# Overview of GEOSTOR sub-project seismic monitoring

Dr. Florian Schmid & Arne Schwenk, K.U.M.

Dr. Simon van der Wulp, TrueOcean

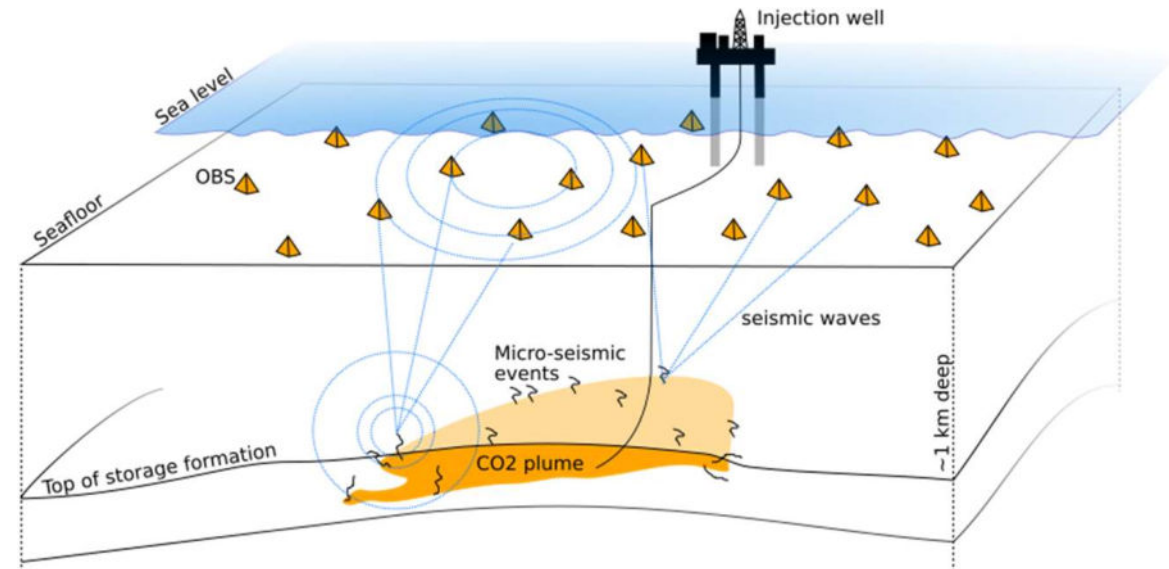
Ivan Starostin, Roy Bitrus, TenzorGEO

Dr. Anke Dannowski, GEOMAR



## TP4: seismic monitoring - primary goals:

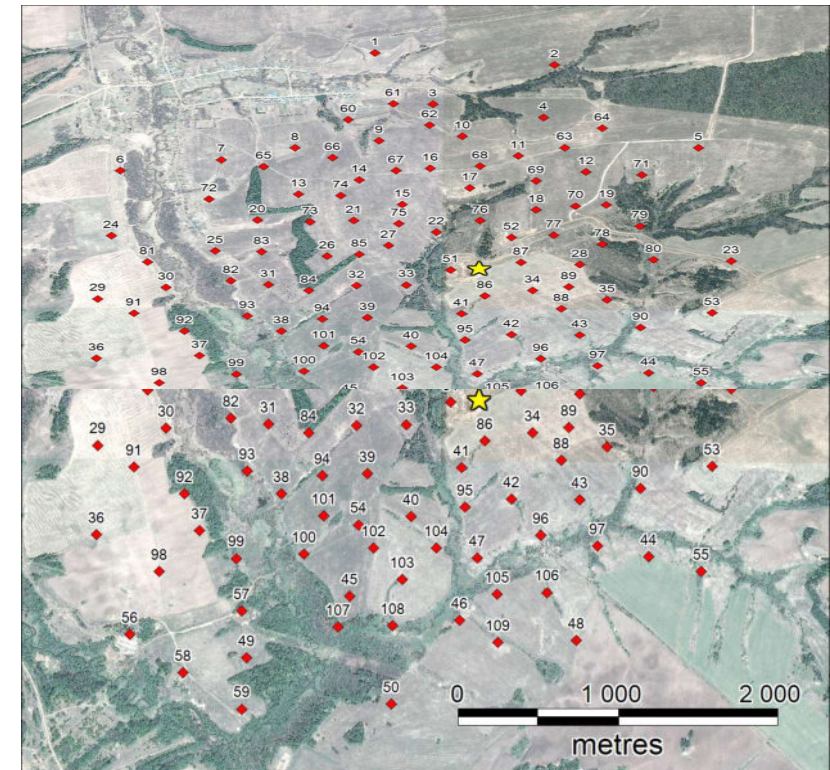
- Develop a system for passive reservoir monitoring, based on the deployment of ocean bottom seismometers (OBS).
- Due to its passive nature, the system is environmental friendly and minimum invasive.
- System will utilize the vibrations originating from the injection process itself & small-magnitude earthquakes.
- The system can track the injected CO<sub>2</sub>-plume in the storage formation.



- The system will produce vast amounts of data, that need rapid processing, analysis and visualization. Experts in computational science are necessary to accomplish this and to facilitate scaling of this system.

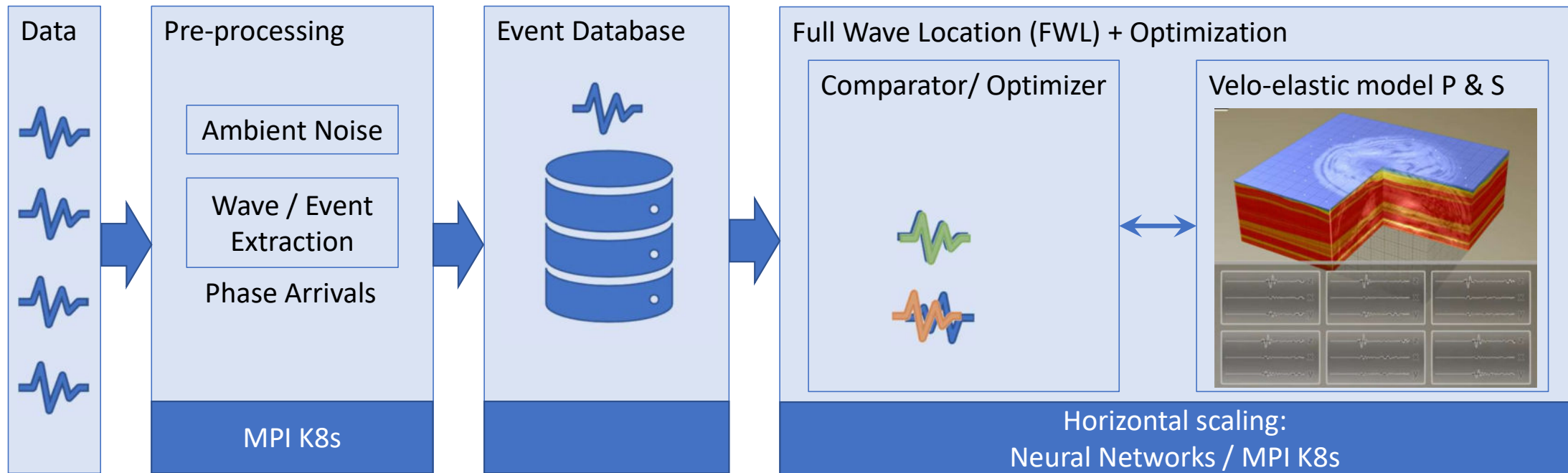
## AP 4.1 – Monitoring – Training data sets

- TensorGEO successfully acquired 4 land training data sets from waste-water and CO2 injection projects
- Two of land data sets are very useful and include calibration pulses, necessary to calibrate the sensors.
- Analysis of land training data has already started (TensorGEO) and the results are quite promising.
- Acquisition of marine data from CCS projects poses a challenge, but we are on track



**Site 2 - locations of seismic sensors**

# Identification and localization of Seismic events



connection with the GEOSTOR geology workpackage