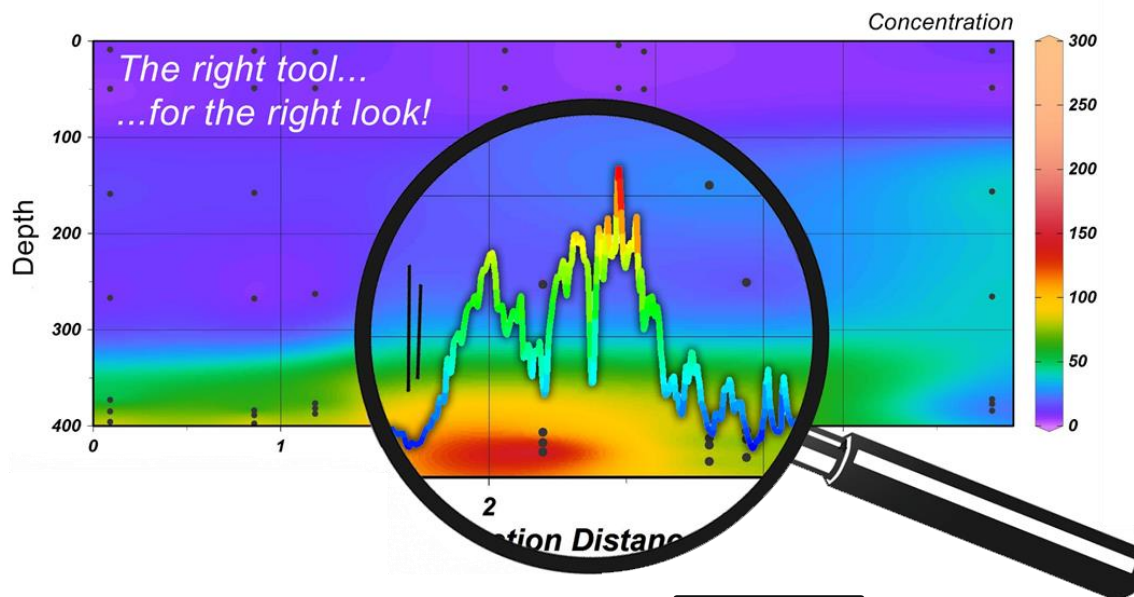


A new project just started... SWIS 2019-2021

Subsea Water Isotope Sensors

A novel tool for continuous and in-situ analysis

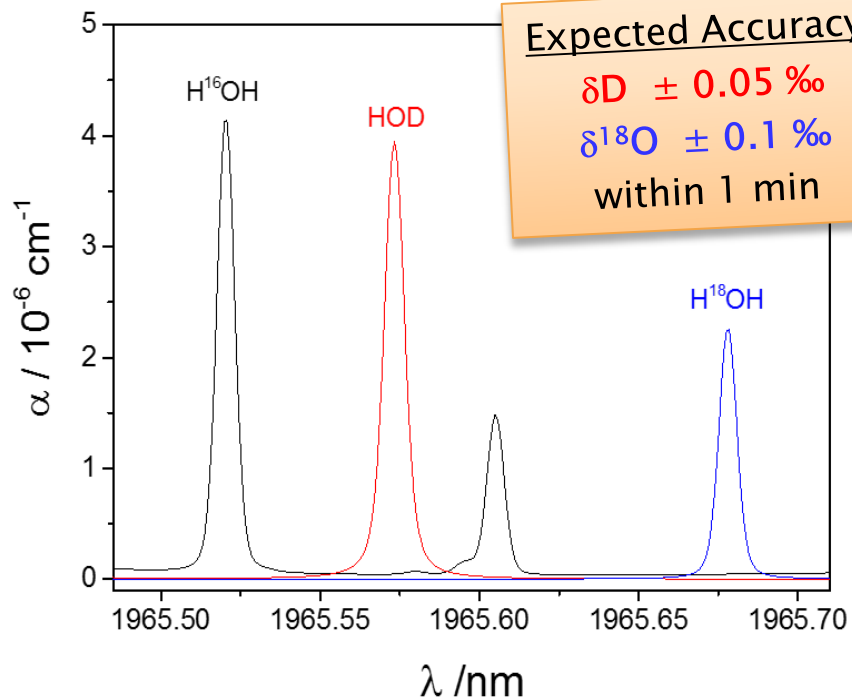
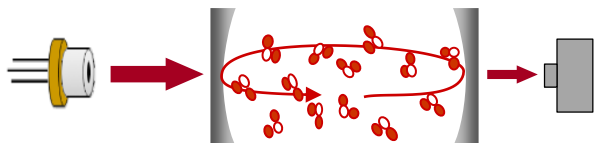
Roberto Grilli, Camille Blouzon



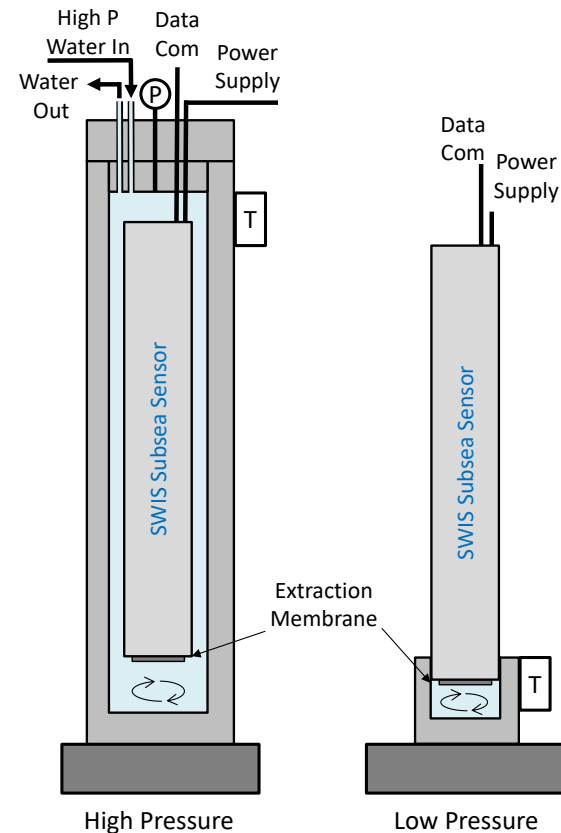
SWIS - Project plans

1. Instrumental Development

High sensitive OFCEAS technique



2. Laboratory Calibrations



3. Test campaigns in the Mediterranean and Baltic Sea

SWIS - Project plans

Engineering work

- High precision and reliability
- Miniaturization
- Low power consumption

Adapted for AUV and Borehole applications

<http://www.whoi.edu>



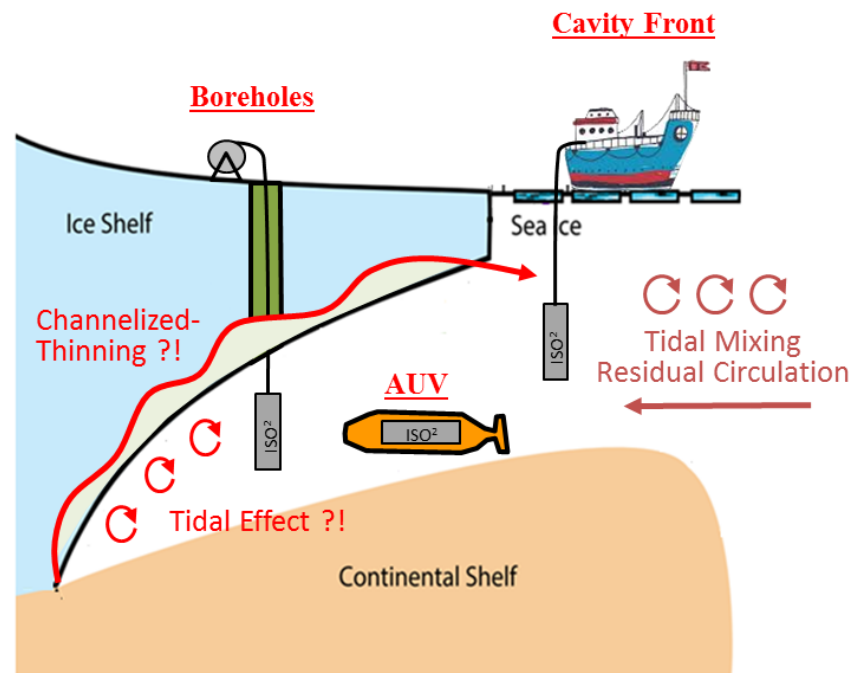
Characteristics

- 50-cm long, 19-cm diam.
- Weight: 25 kg (2000m)
35 kg (6000m)
- 60W consumption
- Battery autonomy: 12h



Kongsberg Maritime

4. High spatial and temporal information at the ice shelves



Answering new questions

What is the role of:

- Tidal and mesoscale mixing ?
- Ocean-driven channelized thinning ?

SWIS - Impacts

⇒ A new tool for in situ water isotope signature in the oceans

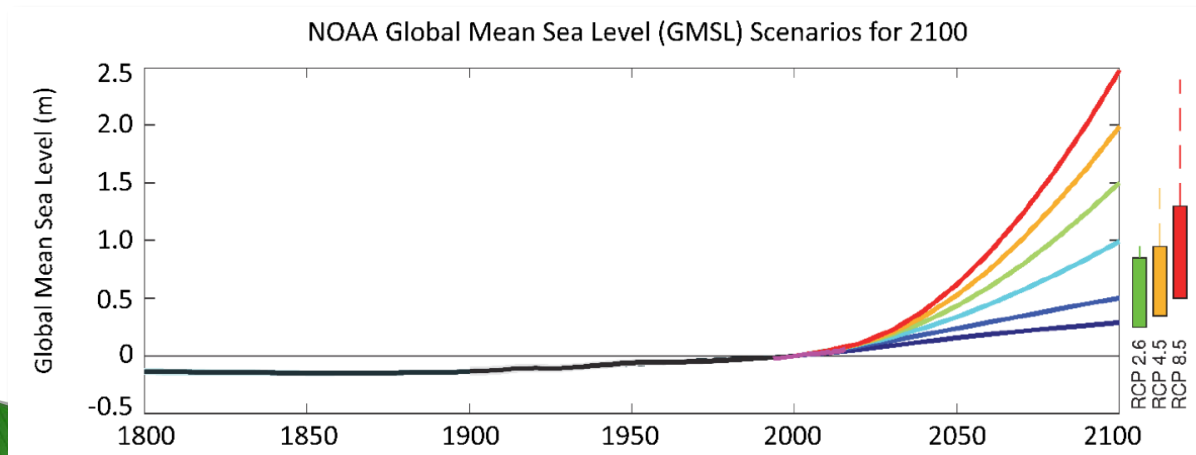
⇒ Industrial Impacts

⇒ Scientific Impacts

⇒ More observation for better constrain the models

⇒ Better understanding of the mechanisms responsible for the ice shelf melting

⇒ More precise sea level rise projections



High Uncertainties
20 cm - 2.5 m
in 2100