

# Koljoefjord observatory – Coastal Circulation and Hypoxia

## One Instrument Covers the Entire Water Column

The Koljoefjord observatory is part of the [EMSO network](#) of ocean observatories. It was installed in April 2011 and has served for investigations of fjord system circulation, [hypoxia](#) and the [carbonate system](#) combining a variety of sensors that cover the water column.



Fig 1: Deployment of 14 technologies to measure pCO<sub>2</sub> and pH

Large variability in most chemical and physical parameters, monthly reference samples, easy access and the possibility of adding new sensors and instruments facilitated the development of new technologies like [pCO<sub>2</sub> optodes](#) at this site.

In the frames of the ongoing [FixO3 project](#) fourteen different technologies to measure pCO<sub>2</sub> and pH were compared by mounting them on the same frame that was connected to the observatory and deployed for two months (Fig 1). These trials are now continuing at 2500m water depth in the Mediterranean Sea.

### Technologies to measure pCO<sub>2</sub> are being tested at 2500m depth in the Mediterranean Sea.

The latest upgrade of the observatory was done in June 2016. A SeaGuardII was connected to the existing sensor string and installed at the bottom replacing the previous combination of two instruments—one RDGP and one SeaGuard. Fig 2 is a photo of the new system laid out on deck prior to deployment.



Fig. 2: SeaGuardII with sensor string

With one single instrument temperature, salinity and oxygen are measured in the entire water column along with currents and particles, from the Doppler Current Profiling Sensor as well as water level and waves. Real-time data is available at <http://koljofjord.cmb.gu.se/>. The recovery and deployment are done by drag-lines; each taking around 10 minutes. [Click here to see a video on the operation](#). Fig 3 shows SeaGuardII data from the Koljofjord analyzed with the new DataStudio 3D software.

One SeaGuardII is measuring temperature, salinity, oxygen, currents and more in the entire water column.

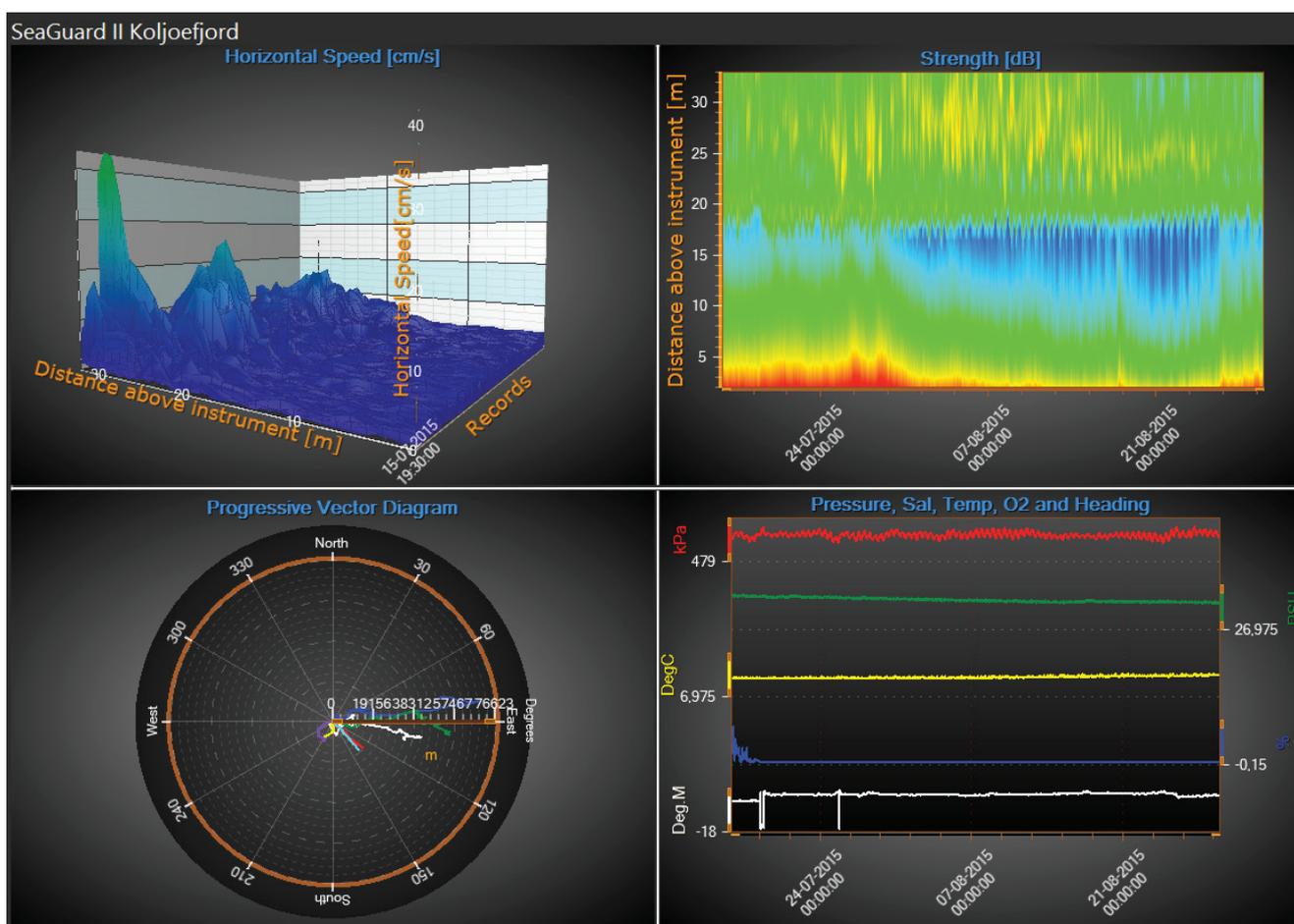


Fig 3: DataStudio 3D analysis of data from SeaGuardII

For questions and more information please [contact](#) Dr. Anders Tengberg, Scientific Advisor and Product Manager.

[Download brochure of Aanderaa SeaGuardII instrument.](#)

[Download brochure of Aanderaa Sensor String solutions.](#)

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