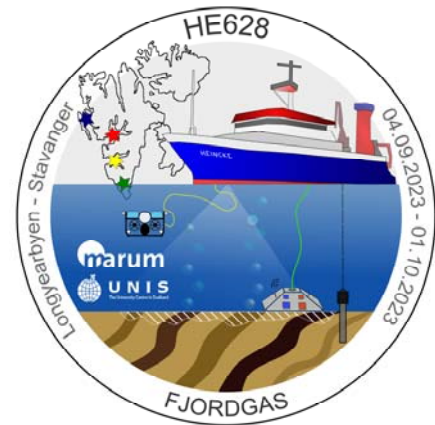


R/V HEINCKE cruise HE628

Project 'FJORDGAS'

Weekly Report

18.09.2023 – 24.09.2023



On Tuesday the 19th of September we completed all planned mapping surveys and sampling stations in Van Mijenfjorden. Preliminary observations show that the gas emission activity appears to be less intense in this fjord compared to Isfjorden but temporally variable. We suspect that gas release here may be influenced by the local tides, as also known from other seep areas. Our investigations in Van Mijenfjorden were followed by a brief explorative mapping in the neighbouring Van Keulenfjorden. In this fjord we detected for the first time the presence of gas bubble emissions from the seafloor into the water column. In the afternoon of the 19th, we celebrated the “Bergfest”, which traditionally marks the halfway point of the cruise. Both the ship crew and the scientific party could then had a barbecue on the working deck near the entrance of the fjord (Fig. 3 and 4). Although the temperatures were around zero degree Celsius, we enjoyed the view towards Svalbard’s snow covered mountains during the long lasting sunset. It was also a good opportunity to thank the crew for their full support, since our expedition would not be possible without their help. Such a great assistance as we experienced here during this cruise is exceptional and it is a pleasure for us to work on R/V HEINCKE!

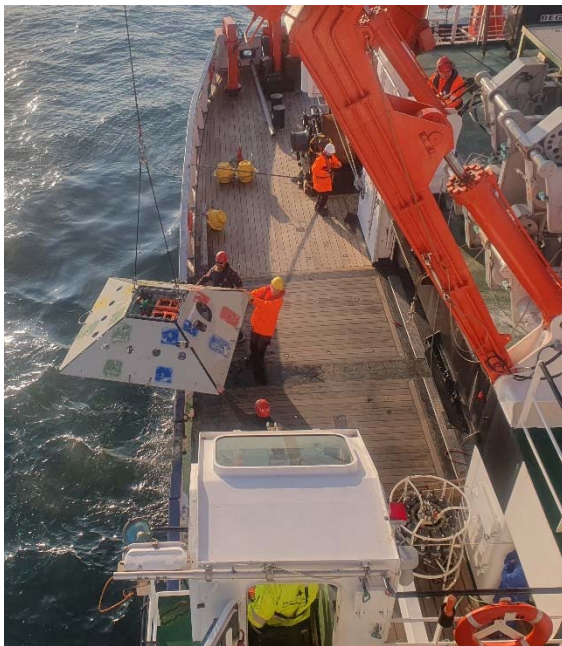


Fig. 1: The Sonar Lander is brought back on deck after a five-day long deployment at the seafloor in Isfjorden.

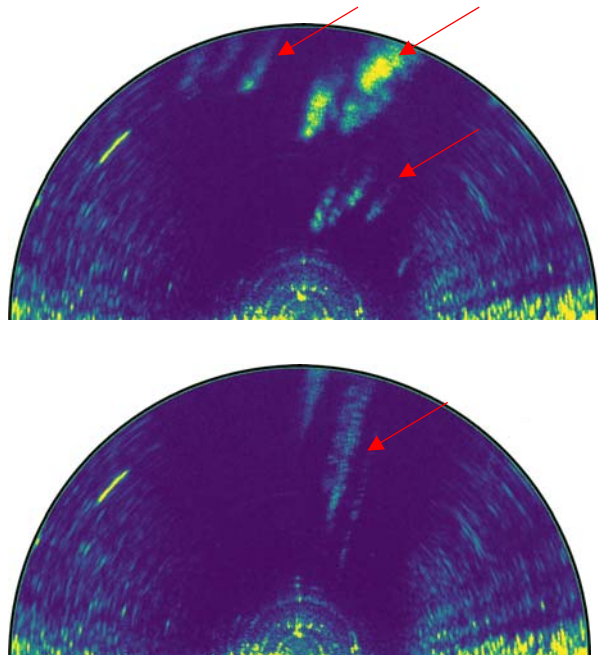


Fig. 2: Two examples of a sonar scan showing the gas bubble emissions (marked by red arrows) with different intensities. A scan has been taken every five minutes and will allow investigating the variability of the seeps.

After our return to Isfjorden, we recovered the sonar lander that was deployed five days earlier at the seafloor (Fig. 1). The sonar lander is an autonomous, battery-powered instrument designed to monitor the variations of methane gas emissions from the seabed over several days. During operations, the sonar lander was set to conduct one scan every five minutes, which will allow for analysis of a tidal influence of the gas bubble emission. Aside from the sonar, a camera and a CTD probe were mounted to the lander. It has been deployed three times during HE628 within three different seep areas within Isfjorden. First analysis of the data confirmed the varying intensities of the observed seep sites (Fig. 2), whereas gas activity was continuous and never stopped entirely during the days of observation. Detailed analysis in combination with the CTD data will follow back home.



Fig. 3: Barbecue on deck at 0°C. We want to thank the crew enabling the scientific sampling.

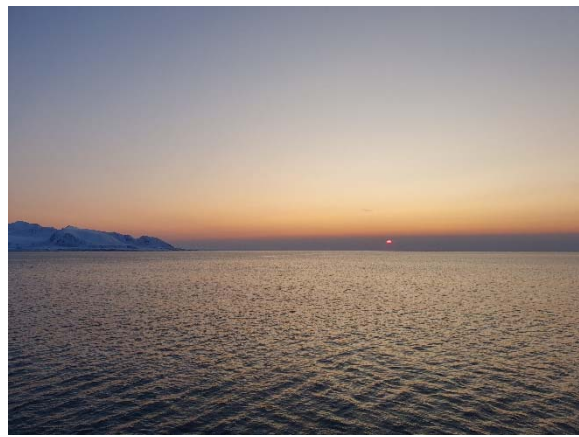


Fig. 4: We were lucky to enjoy our “Bergfest” during a beautiful sunset.

Today we finished our last station and hydroacoustic survey here in the fjords of Svalbard. Part of the scientific crew will disembark in Longyearbyen, while the other part will transit on R/V HEINCKE southwards to Stavanger, where the cruise will end in one week. When passing the Lofoten, we plan to investigate an area at the Norwegian shelf known for gas seepage and report about the results in our last weekly report.

With many greetings on behalf of the entire scientific crew,

Miriam Römer

Chief scientist on HE628