

POS515 CALVADOS
CALabrianarc mud VolcAnoes: Deep
Origin and internal Structure
 June 18 – July 13, 2017
 Dubrovnik - Catania



Weekly Report 3 July3 – July9, 2017

After we successfully recovered all our OBS instruments at ‘Venere’ mud volcano (Figure 1a), we completed a transit of ~30 nautical miles to the next study region: a chain of mud volcanoes with the most prominent structure called ‘Poseidon’. However, due to high winds (7 – 8 Bft) and sea (3.5 m), we were unable to collect any seismic lines between the two study regions. In the morning of Monday, July 3, we started to re-deploy the set of 12 OBS instruments, after all data from the previous deployment had been secured from the recorders, batteries were exchanged, and all units had been re-programmed. The deployment went swiftly and with a favorable weather window ahead, we deployed the 2D streamer and GI gun to acquire two long refraction seismic profiles across the OBS. However, at 19:30 in the evening, weather had steadily declined forcing us to abort the seismic survey.

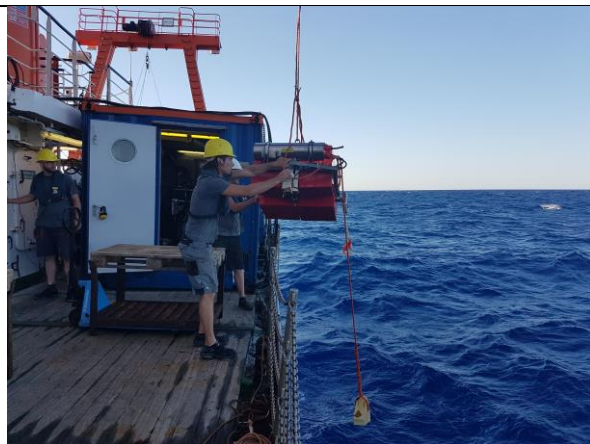


Figure 1a: Recovery of an OBS at Venere mud volcano (D. Heßelmann, M. Keller, F. Schrage)



Figure 1b: Preparing P-Cable for deployment (J. Bialas, F. Beek, M. Riedel, F. Schrage, V. Bähre, S. Muff)

We used the down-time to assess the data we collected across the ‘Poseidon’ mud volcano chain, as well as the nearby mud volcano ‘Sartori’. In contrast to the ‘Venere’ mud volcano, where we saw deep seismic stratigraphy well below the root of the main structures, seismic imaging around ‘Poseidon’ proved difficult. With few seismic reflections and no deep targets, we decided to turn our eye to ‘Sartori’ mud volcano, which (from the one line acquired) offered much more favorable structures for 3D imaging.

After weather had improved, we started to deploy our airgun system and 2D streamer again on Tuesday afternoon (16:00) for more reconnaissance work and to obtain more 2D seismic profiles across the OBS instruments in order to augment our post-cruise seismic velocity analyses. Since our 3D target had moved, the OBS no longer are required to stay on the seafloor until the end of the survey. Thus, we decided to recover these instruments on Wednesday (July 4) morning, which we completed within 6 ½ hours. During the OBS recovery, a second team worked on dismantling the 2D streamer and rebuilding the P-Cable system. At shortly after 3 o'clock in the afternoon, we were ready to deploy the P-cable system (Figure 1b). After a short glitch in the system caused by a broken shackle and a swift repair with great support by the ship's crew, all gear was re-deployed and the 'Sartori' 3D P-Cable survey officially started on July 4th, at 22:00.

Since Wednesday night, we had completed about 75% of the survey grid by Sunday afternoon, with only few minor recording issues. However, we can easily interpolate between those missing pieces of information with no major impact on the outcome of the 3D data.

While the P-Cable survey is ongoing, the scientists continue with data management: all data have been secured, data quality checked. As well, OBS equipment no longer required for the remainder of the cruise is put back into shipping crates. We also start to prepare for arrival in Catania and work on the logistics for offloading and trucking of all gear back to Kiel.

With the end of cruise coming closer, much work completed, people start to look forward returning home; yet some heavy work load still lies ahead of us. However, spirits of all crew and scientists are still fine, especially after the sea state has declined by mid-week to almost lake-like conditions.

Michael Riedel, July 9, 2017

on behalf of all involved in the project CALVADOS