



RV METEOR - M178 "HazELNUT"

Emden - Las Palmas, 21.11. - 19.12.2021

3rd Weekly Report (29.11 - 05.12.2021)

The expedition M178 HazELNUT started station and survey work in the first working area offshore the volcano Stromboli on the morning of November 30. The first task was the sea acceptance test for the newly installed transducers of the deep-water multi-beam echo-sounder. After a short profile run, however, it quickly became clear that although the new transducers were working perfectly, other components of the complex system were a cause for concern for the hydro-acoustics team. In close cooperation with RV METEOR's Scientific Technical Service, the manufacturer was able to quickly identify the source of the problem by means of a remote examination. The solution to this problem is probably to replace some components in the pre-amplifier unit of the multi-beam echo-sounder system. However, we will only be able to pick up these components in the port of Las Palmas. This means that a reliable mapping at water depths greater than ~1000 m has unfortunately not been possible in the working area offshore Stromboli or Etna.



Photo 1: The RV METEOR in optimal working weather in our working area off Etna (Photo: Felix Gross)

On Wednesday, December 1, we reached our main working area offshore Sicily: Mount Etna. Within a few hours, the six seafloor geodesy stations that were deployed last year during expedition SO277 with the research vessel SONNE were safely recovered through the energetic efforts of the bosun and his ship's mechanics. The geodesy-team immediately started analysing the data and can already say that the mission was a success. The preliminary data looks promising and five of the six stations will be released after their maintenance in the next few days, at the end of the work offshore Etna.

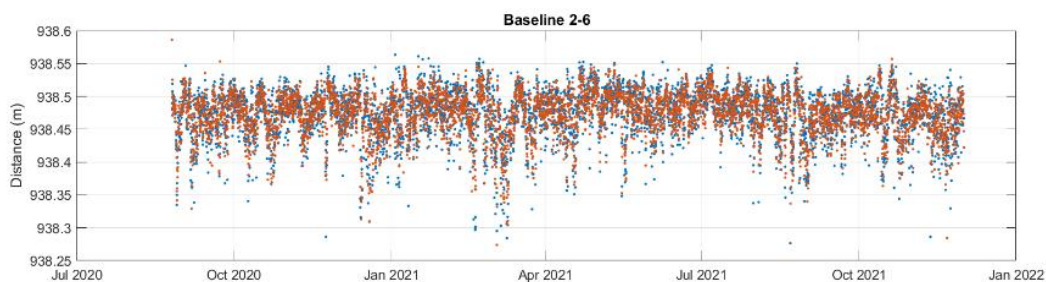


Figure 1: Example of an unprocessed baseline of the recovered marine geodesy stations.

After the successful retrieval of the geodesy stations, the first geology stations were scheduled for the 2nd of December. Station work was supposed to start with box corer sampling, which was intended to

provide us with information about the shallow seafloor conditions. Unfortunately, the device was lost due to a broken steel cable. Subsequent attempts to recover the device using a dredge over multiple hours were unsuccessful and the search for the device had to be abandoned in the evening. In spite of this, the geology team was able to begin the first gravity core stations on December 3 with full enthusiasm. With the help of the extremely motivated and energetic ship's crew, we were able to retrieve more core metres than we had expected for the first day. This trend continued over the following days and one core after the other was opened in the geolab, before undergoing geochemical sampling for methane and pore waters were taken (photo 2).

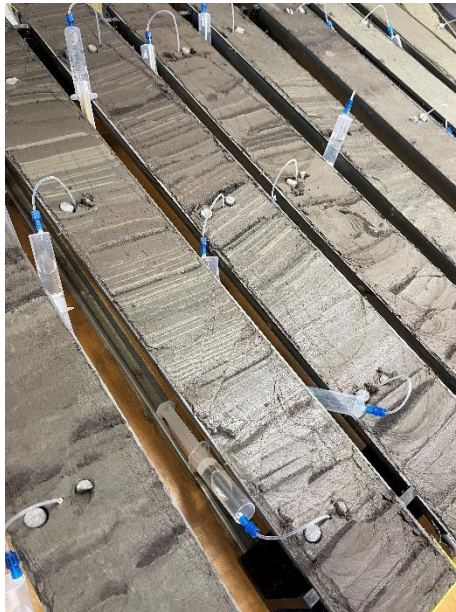


Photo 2: Sediment core from the amphitheater headwall of the central continental slope offshore Etna. Highly deformed sediments were already visible upon opening the cores.

Despite the loss of the box corer and operational problems with the deep-water echo-sounder, we managed to successfully carry out essential station work and surveys with great support from Captain Hammacher and his crew in the working area offshore Etna.

All participants are well and send Adventurous Greetings home,

Felix Gross
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(Chief Scientist M178)