

## 2. Weekly report of MARIA S. MERIAN Expedition MSM127

### Las Palmas - Las Palmas (Gran Canaria)

18.03. – 20.04. 2024

The second week started with a success - the second MeBo drilling above the headwall of a landslide southwest of Cape Blanc resulted in a bore hole over 30 m deep with a recovery of 63%. Olive-green sandy to clayey sediments rich in organic material were recovered, with a high-resolution history of the last approximately 100,000 years on the continental slope of northwest Africa. After interim work dedicated to particle transport in the form of nepheloid layers, we returned to the headwall of the landslide, this time directly below the break-off. Here too, a hole was successfully drilled to a maximum depth of 37.70 m and with a core recovery of 74%. These sediments were significantly consolidated, the load of several tens of meters led to a consolidation of the hemipelagic sediments. We would have liked to investigate this topic further with a third drilling, but deteriorating weather conditions with wave heights of 5 m again did not allow the drilling rig to be dropped any further, so we decided to leave this working area early and move to the next area southwest of Cape Timiris, for which significantly lower wave heights were forecast. At least we were able to obtain an array of seven gravity cores for another topic of the Cluster of Excellence, the special arrangement of which is intended to help understand the variability of proxy parameters of a sediment sequence in space and time. And we hope that we can complete the planned work in Area A on our way back to Las Palmas.

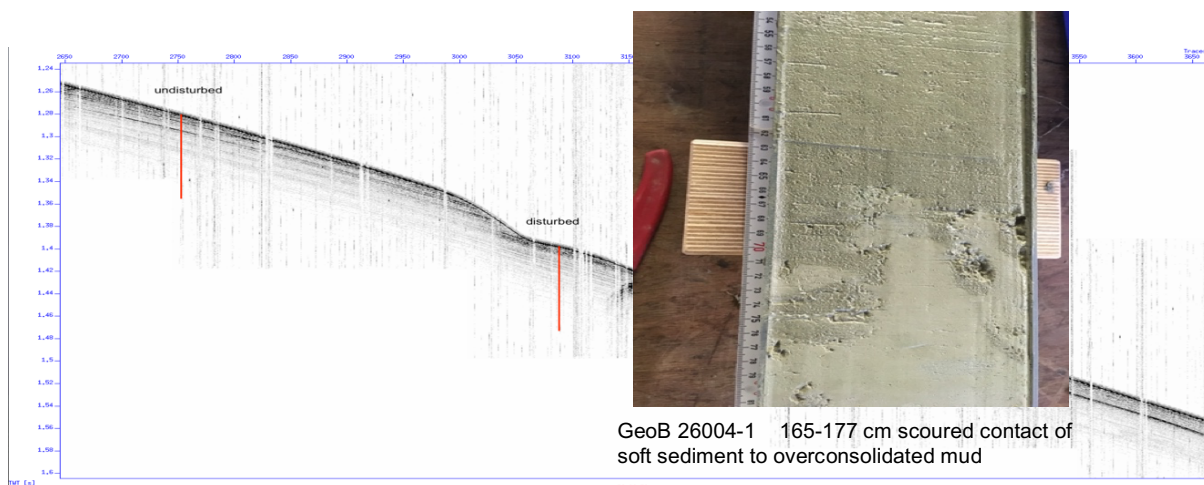


Fig. : Parasound Profile MSM127-2-PS28-32 with Headwall of a landslide SW of Cap Blanc.

On the night of Good Friday we took an underway survey southwards along the western rim of the double chain of coral mounds. Preliminary investigations of an expedition with research vessel METEOR led to the expectation of a promising coral hill at around 19° N 17° W, which rises 70 m above the upper continental slope off Mauritania, but according to ROV images no longer contains any active life. When did this coldwater coral reef die, and why? What role does the extent of the oxygen minimum zone play in this area extending well towards Cape Verde Islands? When were the optimum growth conditions for this complex ecosystem? These questions should be clarified by drilling into the reef hill. In an exciting precise landing on the top of the reef with an area of barely more than 10 x 10 m - MeBo70 itself has a span of 7.5 m - in less than an hour, the drill rig was able to land safely on the plateau, without the risk of slipping off the significantly steeper flanks. The operation once again demonstrates the excellent maneuverability of the research vessel MARIA S. MERIAN, which is the prerequisite for such small-scale campaigns. One and a half day later, we can report that the MeBo-Team was able to drill to a depth of 72.70 mbsf with a recovery of 80%, in the lowermost sections of even >100% due to sediment expansion.

Today, Easter Sunday, we were surprised with a delicious holiday menu that the galley team had conjured. Goodies on the cabin doors had already shown early in the morning that the Easter Bunny had not shied away from the detour via the tropical eastern Atlantic. The work is progressing well, and the atmosphere on board continues to be great.

Warm Easter greetings  
from board Maria S. Merian,  
Torsten Bickert  
31 March 2024



Easter morning at sea