

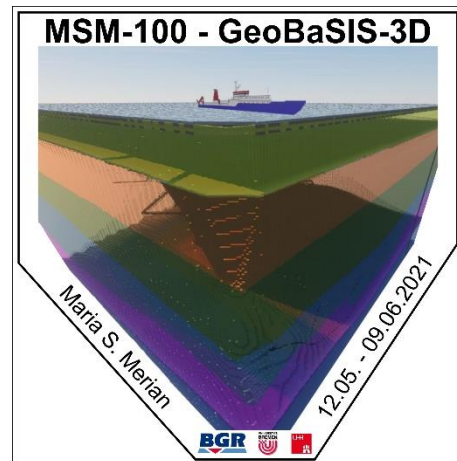
R/V MARIA S. MERIAN

MSM100 "GeoBaSIS-3D"

Emden - Emden, 12.05. - 09.06.2021

4th Weekly Report

31.05. - 06.06.2021



The fourth week of the MSM100 GeoBasis-3D survey cruise was dominated by the 3D reflection seismic measurements. Our acquired survey area is 18 km long and 5.2 km wide. In this so-called box we sail with the MARIA S. MERIAN every 50 m a 18 km long profile with the towed 3D seismic equipment. This way of sailing requires high navigational precision and concentration of both the 3D seismic crew in the seismic laboratory and the nautical officers on the bridge. In this way, we gradually filled the box with seismic profiles that will be merged into one large 3D dataset. With still very cool but calm weather, we were able to complete the measurements without interruptions on 05.06.21. The box consists of a total of 105 profiles + 13 "infill" lines that were used to close gaps. This data set will be processed in Hannover in the coming time, so that the subsurface from the seafloor to the base of the Zechstein at a depth of about 3 km can be mapped in three dimensions.

On 05.06.21 we started to retrieve the 3D equipment, which has now been in the water for 12 days continuously. Since we had added some new components to our equipment, we were very curious to see how these components coped with the continuous load. Fortunately, there were hardly any signs of wear. During the night we started to survey the seafloor of the survey area with the multibeam echo sounder. Today, in finally sunny weather, the remaining 10 ocean bottom seismometers will be retrieved.

In the coming week the survey with the multibeam echo sounder will be completed and at the same time the demobilization of the extensive equipment will be started and prepared for the entry into the port of Emden. All data will be copied and backed up. Due to the very short transit of no more than 12 hours, there is not much time for the demobilization work. We look back with satisfaction on the past 4 weeks in which we have carried out an extensive and demanding seismic program. Our special thanks go to Captain Maaß and his crew. We received excellent support from the crew of the MARIA S. MERIAN, from the handling of the equipment on the working deck, to the technical and nautical support, to the great catering and support from the service team. Solutions were always found to all questions and problems when using the equipment. Many thanks for this, we feel in good aboard of MARIA S. MERIAN, as always.

Tuesday afternoon we will sail back to Emden, where we will arrive Wednesday morning and need the day to disassemble the heavy equipment before disembarking on Thursday and heading back to Hanover, Bremen, Hamburg and Edinburgh. Of course, we have been closely following the news and especially the pandemic situation over the past few weeks. After we went into hotel quarantine with almost nationwide incidences of over 100 and the country

was in lockdown, we were able to follow from the news and reports from home how the situation has increasingly improved and in the meantime the lockdown measures have largely been lifted.

Everyone on board is well and looking forward to seeing their families, friends and partners again.

Best regards on behalf of all participants

Axel Ehrhardt

(Federal Institute for Geosciences and Natural Resources (BGR) - Hannover)

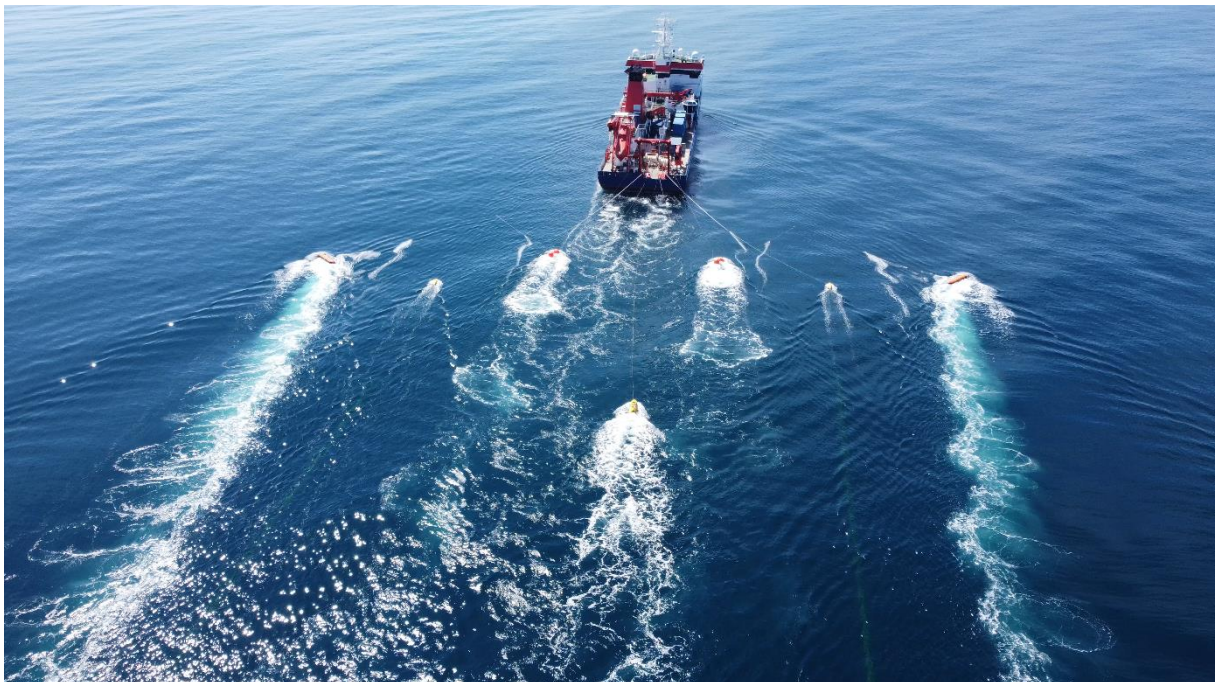


Figure 1: Aerial view of RV MARIA S. MERIAN including the towed 3D seismic equipment. On the outside the paravans can be seen. Further inside, one can see the small yellow head buoys of the streamer cables. You can even see the yellow streamer cables below the sea surface. The streamer cables are 1050 m long each. Further inside you can see the buoyancy bodies of the seismic air pulsers and at the very center a navigation buoy. (Photo B. Hahn)

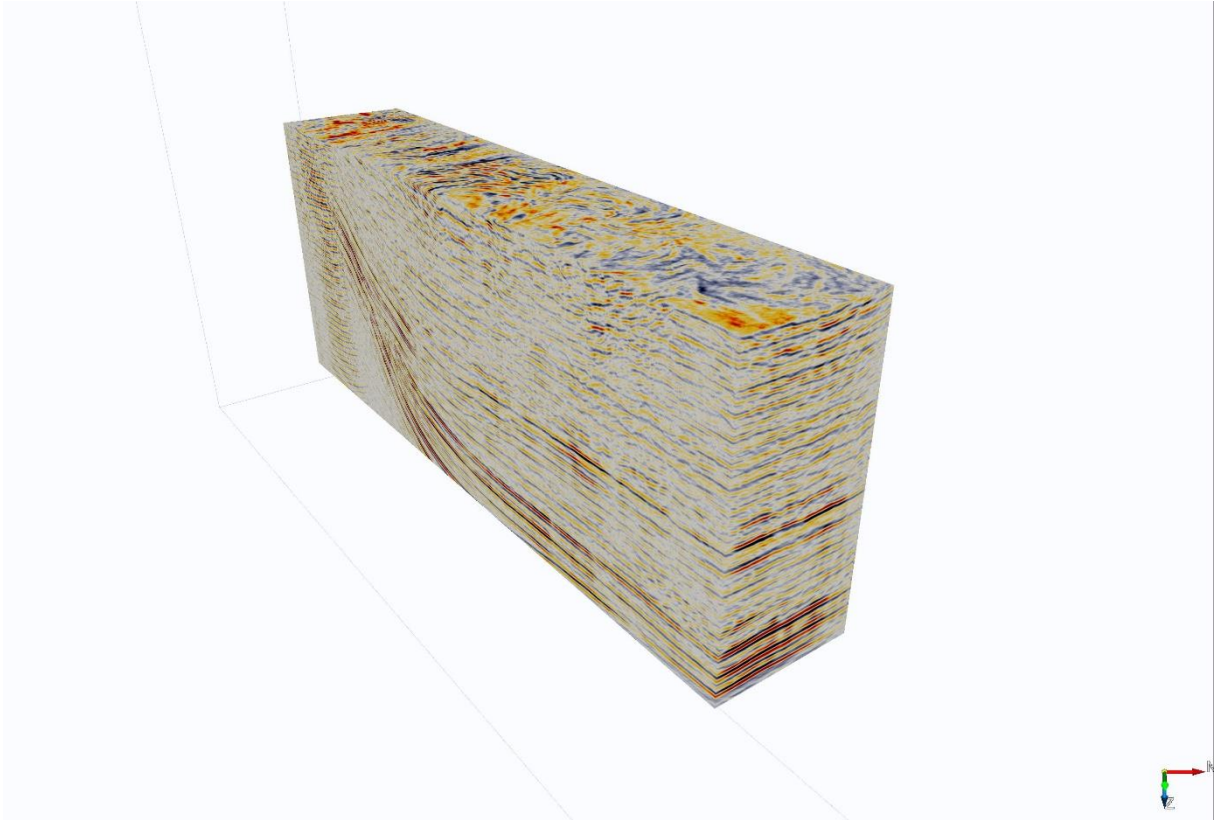


Figure 2: Preliminarily processed part of the 3D block. The time slice seen from the top shows compaction faults and the Belinda salt dome. (Picture A. Ehrhardt)



Figure 3: View to the west at calm sea. (Photo A. Ehrhardt)