

SO292 ICECARB

Towards an understanding of carbonate platforms in the icehouse world

RV SONNE

May 15 – June 21, 2022

Nouméa – Nouméa (New Caledonia)



6th Weekly report

June 13 – June 19

After mapping and sampling along the flanks of Diane carbonate bank, RV SONNE moved south in order to fill in the gaps in multibeam data in working areas which were visited previously. This was also a chance to deploy the OFOS in a zone where this previous mapping showed that the sea floor is characterized by a complex morphology. This includes areas covered by blocks and areas which appear swept by currents. The OFOS dive revealed spectacular views of the sea floor (Fig. 1) where it can be recognized that the blocks of the mass transport complex are mostly angular in shape. Blocks consist of bedded limestones, at places cross stratification can be seen. In between the blocks we also found patches of dead coldwater corals embedded in the calcareous ooze.

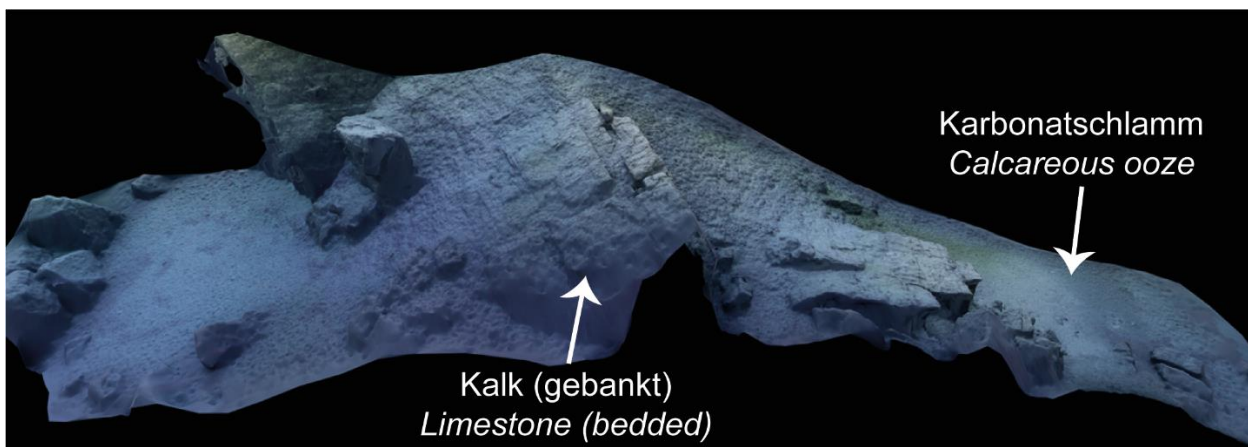


Fig. 1: Photogrammetry of a part of the OFOS track recorded south of the Willis Islets carbonate bank in a water depth of 670 m (no scale).

Parasound profiles acquired in the same area show the relation between fields of blocks and carbonate ooze (Fig. 2). The ooze accumulates on the current-protected sides of the blocks.

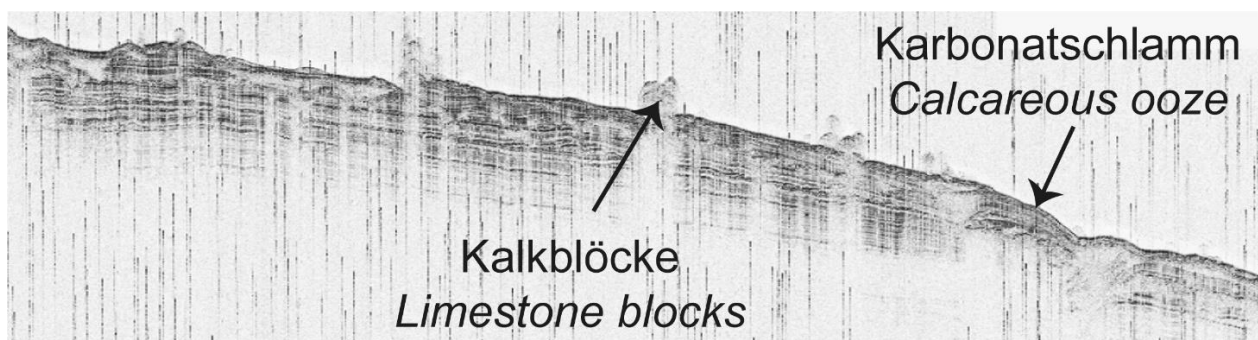


Fig. 2: Parasound profile measured in the area of the OFOS dive (no scale).

Unfortunately, the end of cruise SO292 was approaching and we had to leave this fascinating working area to move further south to complete some multibeam tracks around Tregrosse Reefs carbonate bank. Two OFOS dives and several sediment sampling stations at dedicated locations were performed in order to characterize channel and lobe systems of calciturbidite deposits. We also measured a last CTD station at the southern flank of the carbonate bank. Station work terminated right before noon on June 18th and RV SONNE started the transit back to the harbor of Nouméa with an expected arrival on the morning of the 21st of June.

The science team is currently packing the equipment and performing backups of the many data collected. These are 1168 nm of multichannel seismic profiles, 2543 nm of Parasound profiles, 9897km² mapped with the multibeam and more than 5 of Tb of visual material acquired with the OFOS. Together with the data from the sediment sampling program wealth of data will allow us to address the key questions of our research project.

This is the last weekly report of the cruise. Therefore, it is my opportunity to thank Captain Oliver Meyer, the officers and the crew of RV SONNE in the name of the entire scientific party for the great support we experienced for our research. This was fundamental for the success of our cruise. We are looking forward to come back in the future onto this ship with it's great crew.

Everyone is in good health and sends greetings home.

Christian Betzler

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