

Scientific Cruise SO315 with RV SONNE

CARNIVAL

08.10.2025 (Antofagasta/Chile) –

17.11.2025 (Balboa/Panama)



3. Weekly Report (20.10.–26.10.2025)

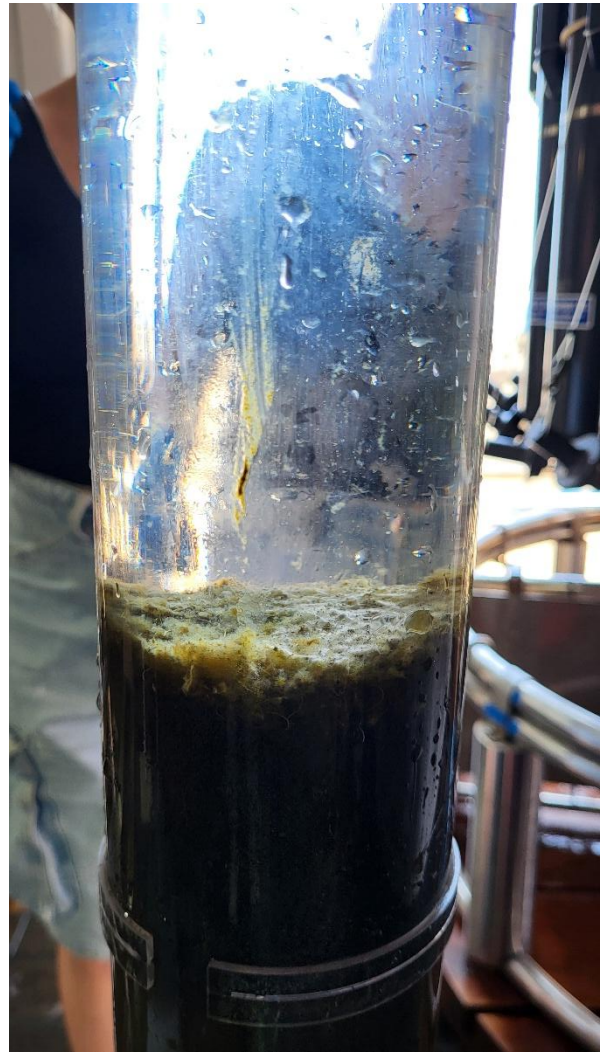
From 19 to 24 October 2025, the SONNE operated in the third working area on the Iquique Ridge west of the Peru-Chile Trench. The aim was to collect sediments up to one million years old from the seamount areas. After initial challenges with core sampling in the southern part of the working area, several sediment cores with a length of > 8 metres were successfully recovered further north. A total of nine stations were visited at water depths between 2700 and 4440 metres, with sediment cores (multicores and gravity cores) successfully retrieved at eight stations. At four stations, hydrographic data and water samples were collected from the water column using the CTD probe and rosette. At one station in the northern part of the working area, water column sampling was complemented by the deployments of the marine snow catchers, in-situ pumps and the multi-net. Five Argo floats were also deployed across the working area. On 24 October, the scientific programme in the third working area was successfully completed. This was followed by the transit to the fourth working area off the mouth of the Río Loa, which was reached early in the morning on 25 October. Here, hydroacoustic measurements were carried out on the shelf before the ship made an unscheduled departure for the port of Iquique.

An important part of the scientific programme of SO315 is the extraction of short cores with lengths of 40-50 cm, so-called multicores. At each station, 12 multicores are extracted in parallel, which are then curated by the various working groups (micropalaeontology, microbiology, geochemistry, sedimentology, pore water). The surface sediments of the sea floor obtained in this way enable, on the one hand, the validation of the hydroacoustic interpretation prior to deployment of the gravity core and, on the other hand, reference and calibration studies for the planned palaeoceanographic and palaeoclimatic reconstructions.

Best regards from the South Pacific,

Patrick Grunert (Chief Scientist)

Frank Lamy, Andrea Jaeschke (Co-Chief Scientists)



Left: Multicores from 2500 m water depth south of Antofagasta. Right: Multicore from the oxygen minimum zone off Mejillones, showing mats of sulphur oxidizing bacteria (pictures: P. Grunert).