

Scientific Cruise SO315 with RV SONNE

CARNIVAL

08.10.2025 (Antofagasta/Chile) –

17.11.2025 (Balboa/Panama)



4. Weekly Report (27.10.–02.11.2025)

On 27 October 2025, work continued in the fourth working area off the mouth of the Río Loa. Following a dense hydroacoustic survey of the seabed, sediment cores (multicores and gravity cores) were successfully obtained at a total of six stations on the shelf. Sampling the continental slope proved challenging. Due to widespread sediment slides and submarine channels, multicores and/or gravity cores were finally recovered only at three stations between 300 and 2900 metres water depth. At six stations, hydrographic data and water samples were collected from the water column using the CTD probe and rosette sampler. Marine snow catchers, in-situ pumps and the multi-net were deployed at one coastal and one offshore station. On 30 October, the team finally moved on to the fifth working area. There, sediment cores and water samples are to be collected from an area of particularly strong coastal upwelling around Iquique. The conditions were similar to those in the previous working area. Several sediment cores (multicores and gravity cores) were successfully obtained at water depths of up to 150 metres, and hydrographic data and water samples were collected using a CTD probe, rosette sampler, marine snow catcher and in-situ pumps. Greater water depths continue to be characterised by sediment slides. Sediment cores were obtained at three stations between 300 and 700 metres water depth. The northern part of the working area is now being surveyed for greater water depths.

One of the main objectives of Expedition SO315 is to obtain sediment cores as palaeoceanographic and palaeoclimatic archives. Depending on the sediment composition, the gravity corer used for this purpose allows cores up to 24 metres in length to be obtained. Once the sediment core is on deck, it is divided into metre-long pieces, described sedimentologically and measured using a multi-sensor core logger. This instrument not only documents the cores photographically, but also measures the light absorption and magnetic properties of the sediment. The information obtained on board forms the basis for further scientific work on land.

Best regards from the South Pacific,

Patrick Grunert (Chief Scientist)

Frank Lamy, Andrea Jaeschke (Co-Chief Scientists)



Description, sampling and archiving of sediment cores from the fifth working area off Iquique (picture: N. Overbeck).



Left: Documentation of a sediment core with a multi-scanner core logger. Right: A gravity corer with a sediment core being heaved on deck (pictures: P. Grunert).