

RV MARIA S. MERIAN – MSM141 “CAMPOSEIS”

November 7 – December 7, 2025, Rio de Janeiro - Rio de Janeiro, Brazil

3rd Weekly Report (17. - 23.11.2025)

The weather conditions have mostly been favourable and sunny this week. Although a large swell with 5–6 m waves affected us mostly on Thursday, 20 November, this did not affect operations. On Friday, 21st of November, the weather improved significantly, but deteriorated over the weekend. However, it is still good enough not to affect operations.

The week started with the end of shooting operations along Line 220 at 06:27 on the 17th of November. After bringing the airguns and PAM equipment on deck, recovery of the 36 OBS along the line lasted from 08:36 on the 17th of November to 18:16 on the 19th of November. Subsequently, we did an SVP at the north end of the line to better constrain swath bathymetric surveys. This probe reached 2000 m and it took from 19:55 to 20:35 to bring it down and up again.

Subsequently, we proceeded to western end of Line 150 where we started deployment of 61 OBS at 10:09 on the 20th of November and finished deployment at 22:36 (UTC) on the 21st of November. This was followed by the start of airgun operations in the morning of that day. Airgun and PAM deployment began at 00:00. Pre-watch started at 08:45, followed by a soft start at 09:17. Full power shooting commenced at 09:38. The start of shooting was not carried out in the night of 22nd of November because some OBS recording had been set to record after 09.00 of that day. At the start of Line 150 we had three shutdowns due to mammal sightings. At 09:57, mammals were observed within the exclusion zone at coordinates (-47.1720, -27.5791), prompting an immediate shutdown of the airguns. We began turning to return 1 nm along the line prior to the suspension of shooting. After a 30-minute mammal pre-watch, airgun soft start resumed at 10:53. Unfortunately, mammals were sighted again within the exclusion area during the soft start, leading to another shutdown at 11:00. To avoid repeated encounters with the dolphin group, we altered course northward instead of south. Pre-watch recommenced at 11:34, soft start at 12:05 (-47.194, -27.365), and full power shooting resumed at 12:26. The third gun shutdown due to mammal sightings occurred at 12:50 at (-27.381, -47.1605). After losing contact with them, pre-watch restarted at 12:56, soft start at 13:28, and full power shooting at 13:49. Since then, no further mammals have been sighted.

Unfortunately, one of the airguns malfunctioned at 01:57 on the night of 23 November. It was decided to bring the guns and PAM at 08:00 the following morning. Following an inspection, we found that the air hose leading to the seismic source was broken. We started gun deployment at 13:40 once the source equipment had been repaired (this lasted 20 minutes). PAM deployment finished at 14:09 and pre-watch will resume in 40 minutes. Following an inspection of the shooting records, we will return to the position we were in at 01:00 (-46.399, -27.481).

Overall, it took us around 12 hours to return to the point where the guns failed. The decision to reshoot was made based on the difficulty of imaging the continental necking zone, where sediments are thick and the SDRs and underplating are located, as well as the need to obtain a good seismic signal in distant onshore seismic stations, and the fact that our schedule permits it.

We still do not know if the Brazilian Navy will grant permission to deploy additional OBSs near the western end of Line 150 and along Line 140, where we will need to return to search for the missing OBS. We will wait until next week to find out if permission is granted and, if time allows, potentially deploy the extra instruments along Lines 150 and 140.

Greetings on behalf of the cruise participants,

Prof. Dr. Marta Perez-Gussinye
MARUM, Universität Bremen

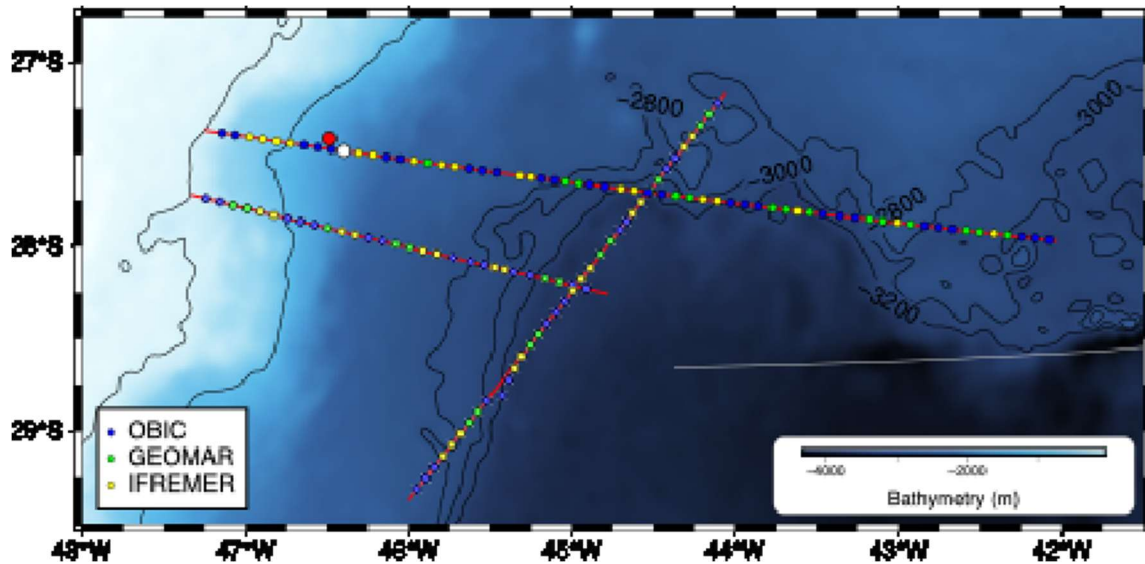


Figure 1: OBS stations deployed along line 140, 220 and 150 color coded by institution. All OBS along lines 140 and 222 have been already recovered (marked with white cross). The red circle marks out current location at 14:30 LT and the white circle the location where full power shooting will restart.