

Weekly Report for R/V *Littorina* cruise L16-13

cruise leader: Philipp Held

R/V *Littorina* cruise L16-13 was a joined cruise for the two Cluster of Excellence “The Future Ocean” part-projects ROSEC and HAM. These two projects concerning about hydroacoustic seafloor and habitat discrimination and the influence of micro-scale seafloor roughness on high-frequency acoustic scattering.

The cruise took place from 11.07 until 14.07.2016. It started and ended in Kiel. As test site, a region in the Bay of Lübeck, which was already surveyed and sampled by Peter Feldens, was chosen.

Littorina left her berth at 09:00 on departure day. The morning was used for installing and set up the hydroacoustic devices. At 12:00 the vessel arrived the start point of the first track line in the Fehmarn Belt. First, a CTD (Conductivity, Temperature and Depth – probe) profile was taken at 54° 36,4167' N and 10° 55,6167' E. Then, the ELAC-pole, carrying a NORBIT multibeam-echosounder transducer was lowered and the transducer submerged. At 12:40 all needed devices were running and the first track was started. A total of three multibeam tracks were recorded in the Fehmarn Belt. The last track line was finished at 15:15. Afterward, roll calibration tracks were recorded. This calibration was finished at 15:40 and the vessel headed for Burgstaaken on Fehmarn, which was arrived at 17:45.

On the second day, *Littorina* departed at 07:20, heading for the test area in the Bay of Lübeck. At 09:20 the test area was reached. Again, first a CTD-profile was taken at 54° 09,1333' N and 11° 05,5000' E. The first multibeam track started at 09:35. At 11:15 a lander from IOW (Institute für Ostsee Forschung Warnemünde), carrying a Laser-scanner for mm-scale topographic measurements was deployed. Then, further multibeam tracks were surveyed. At 13:05 the Laser-lander should be recovered. Unfortunately, the tension of the recovery rope dramatically increased during the heaving maneuver and the rope broke. The lander could hence not be recovered. Afterward, the lander was searched with the multibeam and its exact position could be measured, for a possible recovery by divers in the future.

In the afternoon, further multibeam tracks, using different frequencies were recorded until 16:10. Arrival in Burgstaaken was at 18:05.

On Wednesday the 13.07.2016, *Littorina* departed at 07:15 in Burgstaaken and arrived the test area at 09:07. A CTD-profile was taken at 54° 09,076' N and 11° 05,403' E. During the morning further multibeam tracks were surveyed. Around noon, the pole was heaved and the multibeam transducer was replaced by an Innomar SES2000 standard transducer. In the afternoon, subbottom profiles were recorded along the measured multibeam tracks. Additionally, a SES track parallel to the coastline was recorded. All SES tracks were finished until 16:20 and *Littorina* sailed back to

Burgstaaken, which was arrived at 18:15.

On Thursday the 14.07.2016, departure was at 07:15. Plan for the morning was to check a Sparker-system from IOW for operation. This was done directly off Burgstaaken. After the check, a test-track through the Bay of Lübeck was conducted from 09:15 until 11:00. Then *Littorina* headed towards the eastern entrance of the Fehmarn Belt. There, a wreck was possibly found in sidescan-sonar surveys organized by the BSH (Federal Maritime and Hydrographic Agency). Therefore, several multibeam and SES tracks across the possible position were conducted. However, a wreck couldn't be detected neither in the multibeam nor in the SES echograms. The search for the wreck was finished at 14:00. Due to the bad weather forecast for the next day and the lost of the Laser-lander (all other cruise aims were full-filled) it was decided to return to Kiel. *Littorina* arrived at her berth at about 19:00.

On Friday the 15.07.2016, the used devices were dismantled and took from board. Cruise L16-13 was thereby finished.

At this point, many thanks to the *Littorina* crew for their incredible support and the positive atmosphere on board.

Supplementary note:

The lost Laser-lander could be recovered during a BSH-cruise in the following week.