

## SO268/1 1st weekly report

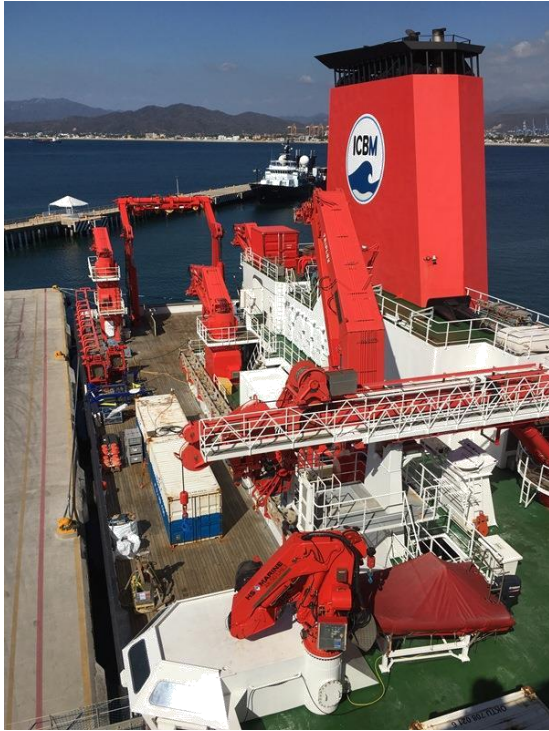
17.-24.02.2019



Cruise SO268 is fully integrated into the second phase of the European collaborative JPIO-Oceans project MiningImpact and is designed to assess the environmental impact of deep-sea mining of polymetallic nodules in the Belgian and German contract areas of the Clarion-Clipperton Fracture Zone (CCZ). Leg 1 will acquire environmental baseline data in the respective trial and reference areas to develop standards and protocols for impact assessments and recommendations for policy and international legislation. A more technical aim of the cruise is to test tools, technologies, and a concept for the environmental monitoring of future deep-sea mining operations. This comprises oceanographic, biological, microbiological, biogeochemical, and geologic investigations which require the deployment of a multitude of seagoing equipment, such as ROV Kiel 6000 for sampling of sediments, nodules, and benthic fauna as well as carrying out in situ measurements and experiments. AUV ABYSS is used for high-resolution acoustic and optic mapping of the seafloor which will be accompanied by video observations with OFOS. Benthic landers and moorings with acoustic and optical sensors will be deployed for the measurements of oceanographic, physical and chemical parameter. Coring devices (box corer, gravity corer, TV multi corer) will be used for collecting sediment samples, and the CTD rosette water sampler and in situ pumps for sampling the water column.

The first group of scientists arrived already on 13.02.19 in Manzanillo to install the ROV-system; whereas the AUV-system had stayed on board from the previous cruise SO267. On the next day, 14.02.19, another group followed to receive the 14 container in total and install the other equipment and laboratories. RV SONNE was waiting for us at a large pier of the passenger terminal next to the city center, where the cruise liners usually stop. Unfortunately, during the first meeting on board it became clear already that custom declarations and the logistic handling of a research vessel in the required dimensions and time frame could not be performed. The crew of the RV FALKOR (Schmidt Ocean Institute) had to make the same experience and had been waiting at this pier for one week already for the delivery of one container.

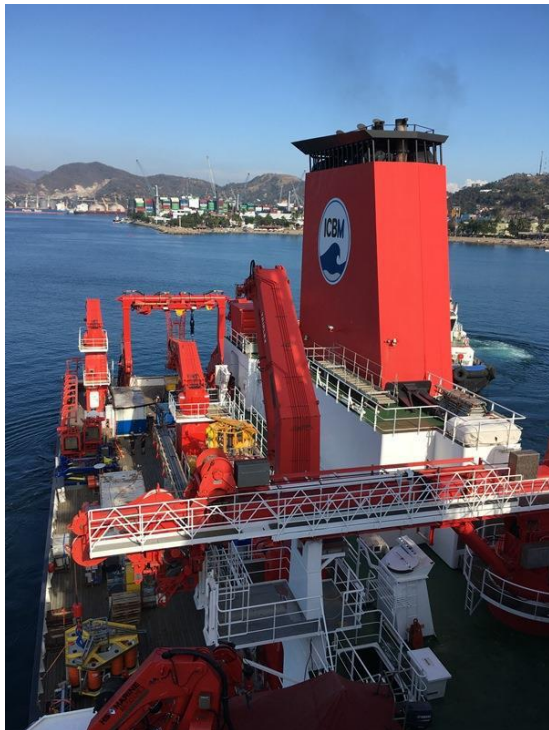
After the arrival of the rest of the scientific crew a tedious and time wise not foreseeable fight for the delivery of airfreight and container started. After a personal meeting with customs and with a letter of support from the German embassy some movements evolved and RV SONNE was scheduled for a 24 hour window to move into the container harbor on the 22<sup>nd</sup> of February. In the meanwhile container and freight had been unstuffed and inspected in detail and were all delivered in mixed arrangements after another inspection via truck to the vessel. By the joined efforts of the crew and the science party we were able to put the containers in position and to distribute the delivered gear on board. At noon of the following day RV SONNE returned to the passenger terminal, where we finally started to rig up the large instrumentation and to prepare the laboratories. Parts of the airfreight were not delivered in time as some of it contained dangerous goods. All together, these circumstances caused a significant delay of 1 week and loss of valuable ship time which will imply a reduced working program. RV SONNE set sail at 16:25 LT on the 24<sup>th</sup> of February leaving Manzanillo and RV FAKOR behind for the transit towards the German contract area.



RV SONNE waiting at the empty passenger terminal in Manzanillo, RV FALKOR in the background.



Loading of container on the back deck (above) and view on the full working deck from the side.



Above: View at the back of RV SONNE with ROV KIEL 6000.

Left: Leaving Manzanillo with the container terminal in the back and a full working deck.

Many greetings in behalf of the scientific party of SO268/1,

Peter Linke