

**1.Weekly Report  
20.12.2019 - 22.12.2019**

22.12.2019

Cruise SO-271/2 is the second leg of the project INDEX2019 for investigations in the German License Area for Polymetallic Sulfides in the Indian Ocean. This leg will focus on geophysical investigations at already identified sulfide deposits with the goal of gathering information about the extension of the sulfides even under sedimentary cover and into the third dimension. Parallel to this, the biodiversity and environmental base line studies continue.

The scientific crew is represented by BGR and marine scientists from the University of Bremen and DZMB Senckenberg am Meer. RV SONNE moored in Port Louis, Mauritius, on Dec 17<sup>th</sup>, and after the scientific crew of the preceding first leg had disembarked with their equipment, the 14 members of the second leg's scientific crew could move into their cabins and set up the laboratories and instruments on Dec. 18<sup>th</sup> and 19<sup>th</sup>.

On Friday, Dec. 20<sup>th</sup> RV SONNE sailed at 08:30. After maintenance of the magnetic compass and short sea trials of both lifeboats, the 750 nm transit to the working area began shortly before noon. At sea we met fresh southeasterly winds of 6 Bft. accompanied by some swell.

After leaving Mauritius' 200 nm zone we test-deployed the EM sensor system "Golden Eye", the center piece of our measuring campaign, early on Sunday morning. The difficult conditions with high sea states and the size of the instrument platform with its 3.6 m diameter were no obstacles for SONNE's experienced crew. After conducting electrical and communication tests with all sensors installed, Golden Eye was returned to the deck safely. The releasers of the Ocean Bottom Seismometers which we will deploy during this cruise were tested at 2500 m depth. Finally, the towed magnetometer system was deployed and we are now underway to our first work area where we are scheduled to arrive on Monday around noontime.

After a short time of getting accustomed to the ship's motions, all on board are well and looking forward to the coming Christmas days as well as to the ambitious scientific program which we will work on in the coming weeks.

With best regards,

PD Dr. Udo Barckhausen, chief scientist

Federal Institute for Geosciences and Natural Resources