

Expedition M149 with R/V Meteor

4. Weekly report

After the successful mission of the seafloor drill rig MeBo last weekend the device was again deployed on Monday. The aim of the drilling mission was to sample another pull-apart basin – this time along the “Lineament South”. In combination with sediment cores from the “Lineament Center”, the activity of these strike-slip faults and the general tectonic history of the Gulf of Cadiz region may be unraveled based on the lithostratigraphic record of the recovered sediment sequences.

The last gravity cores in the area of the strike-slip faults were taken on Tuesday including cores from potential mud volcanoes. From there the research vessel Meteor moved first to the deep sea, where salt diapirs in the „Seine“ abyssal plain were sampled and then steamed to the Alboran sea. During the transit across the Gulf of Cadiz additional gravity cores from potential mud volcanoes were taken. At least one new mud volcano was discovered during the two days of transit and has been named „Funky Monkey“.

Since Friday afternoon the R/V Meteor is in the Alboran sea to study the hydrogeological and tectonic activity of faults. The first study object is the „Carboneras“ fault, which is a NE-SW trending strike-slip fault, which continuous from the land into the Mediterranean sea. It is planned to install the third long-term borehole observatory along the fault. To determine the best location for the observatory a combination of seafloor mapping, sediment sampling via gravity coring and heat flow measurements is currently underway.

Andre Hüpers (Chief Scientist) on behalf of all participants