

IODP Bremen Core Repository

The IODP Bremen Core Repository (BCR) at the MARUM-Center for Marine Environmental Sciences at the University of Bremen, is one of three core repository facilities worldwide. The BCR has state-of-the-art laboratories, office facilities and a large refrigerated storage area with a movable rack system. The repository provides services to the international community through advanced curation and sampling techniques, database archiving (Drilling Information System, DIS), and participates in a wide range of education and outreach activities.



The reefer (refrigerated storage area) of the IODP Bremen Core Repository in the MARUM building.

The BCR was established in 1994 and now stores **155 km** of cores acquired during 89 expeditions. Approximately 200 scientists visit the repository annually, sometimes working on the cores in week-long sampling meetings. As many as **70,000 samples** per year are taken by visiting scientists and the repository staff. In its 24 years of operation, more than **1,013,787 samples** representing almost **4,670 individual requests** have been taken and distributed worldwide.



Sampling party of Exp. 339 Mediterranean Outflow.

With almost 3,700 visitors from all over the world so far, the repository is an important hub for IODP/ECORD, and the wider scientific community. The BCR significantly contributes to the exchange and transfer of marine science knowledge, leading to invaluable international co-operation and scientific interaction.



Sampling cores from Exp. 381 Corinth Active Rift Development.



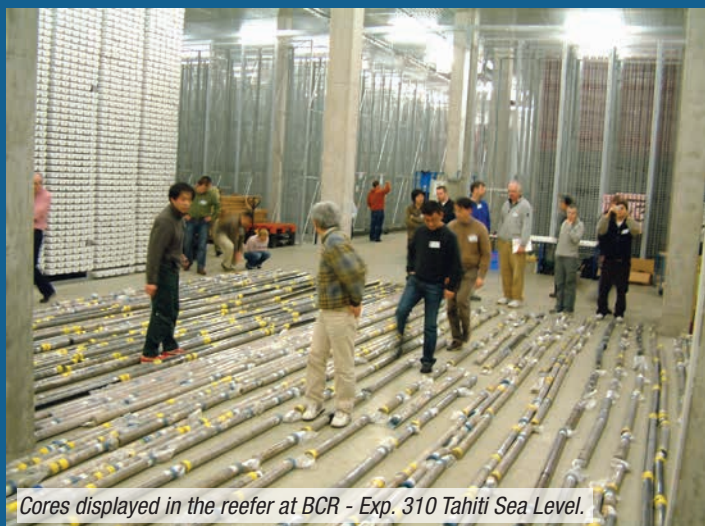
Sampling at the Onshore Science Party of Exp 381 Corinth Active Rift Development.

Cores from present and past scientific ocean drilling programmes are stored in three repositories:

- **BCR:** North and South Atlantic; Mediterranean, Black and Baltic Seas; the Arctic Ocean. **155 km of cores**;
- **Gulf Coast Repository (GCR)**, Texas, USA: Pacific Ocean plate; Southern Ocean south of 60°S latitude (with the exception of the Kerguelen Plateau); Gulf of Mexico, Caribbean Sea. **140 km of cores**;
- **Kochi Core Center (KCC)**, Japan: Indian Ocean and marginal seas; western and northern marginal seas of the Pacific region, defined by the plate boundaries that extend from the Aleutian Trench to the Macquarie Ridge. **134 km of cores**.

Onshore Science Parties (OSPs)

In its role within the ECORD Science Operator (ESO) Consortium, the MARUM, University of Bremen is tasked with curating and archiving collected cores, as well as providing offshore (mobile laboratory containers) and onshore laboratory facilities for systematic core sampling and data gathering according to IODP measurement procedures. *See ESO leaflet for further details.*



Cores displayed in the reefer at BCR - Exp. 310 Tahiti Sea Level.

The mission-specific platform (MSP) expeditions operated by ECORD use a variety of specialised platforms to drill in areas that are otherwise inaccessible. This limits in-depth analyses of the cores during the offshore phase, and so most of these investigations are carried out later at an Onshore Science Party (OSP).



Describing the cores - Exp. 364 Chicxulub K-Pg Impact Crater.

The OSP takes place in Bremen after the offshore operation of an MSP expedition is completed and brings together the entire scientific party. The cores are split during the OSP and the scientists have their first opportunity to study and sample the cores in detail with access to the extensive laboratory facilities of the BCR and MARUM.

ECORD Summer Schools and Training Courses

The Bremen Core Repository organises Summer Schools and Training Courses, which offer unique opportunities to introduce PhD students and Post-docs to IODP science and operations. The Summer Schools provide a range of teaching, from a general introduction to compiling IODP proposals, to learning about ongoing research within this international programme that encourages young scientists to participate in future IODP expeditions. During the 12-day long courses, the participants are onboard a "virtual ship" where they become acquainted with a wide spectrum of analytical technologies and core description methods, including core logging/scanning, and the high standard of practices that take place during IODP expeditions. This comprehensive approach combining scientific lectures with practical exercises on IODP-style shipboard measurements is the blueprint for a series of summer schools held once a year within the ECORD Summer School programme, each of which addresses a major topic of the IODP Science Plan.



Pore-water acquisition - ECORD Summer School 2016.

The 5-day ECORD Training Courses focus on the IODP core-flow procedures to prepare the participants for IODP expeditions and instill them with an appreciation for high standards in all kinds of coring projects.



Practical on structural features in hard rocks - ECORD Training Course 2018.

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BCR website: http://www.marum.de/en/IODP_Bremen_Core_Repository.html

IODP core repositories: <http://www.iodp.org/resources/core-repositories>

ECORD Summer Schools and Training Courses: http://www.marum.de/en/ECORD_Summer_Schools.html

and https://www.marum.de/en/ECORD_Training_Courses.html