SPPreader

The bi-annual newsletter of the
DFG Priority Program SPP 1144

Issue 2, July 2004

The SPP 1144 web site is at:

www.deridge.de12t4()o12083t4(hoprtt4

useful. Please send anyfeedback you mayhave to klackschewitz@m-geomar.de

cooperation with the program or groups working inside this program structure are welcome to contact the respective scientists or the coordinator.

Short title of project	Project leader	Organization
Metagenomic studies of microbial communities	Amann, R.	MPI Bremen
U-Th-Ra disequilibria in basalts (MAR 6-11°S)	Haase, K.	Univ. Kiel

Longer term planning

Another goal of this meeting was to establish a long-term plan for scientific cruises to realize the multidisciplinary studies of the priority program. In particular, discussion focussed on cruises which need to be requested for 2007 and 2008 and an outline of the scientific priorities for multidisciplinary time series sampling and long-term monitoring of the spreading segments at 15°N and 4-11°S.
The following is a list of tasks for the final phase of the 15°N studies:

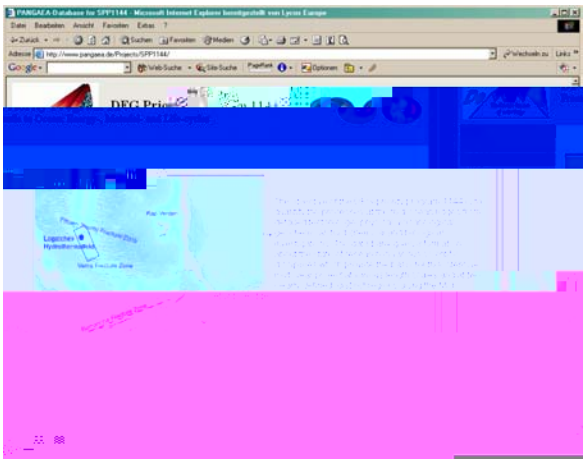
- Design and deployment of navigation beacon network, this network should also stay available after the active SPP phase has ended to help follow-up studies at Logatchev.
- Coordination of the international expeditions in this region
- Identification of the heat source and its x,y,z-son
- Time-scale experiments
- Detailed geological, tectonic and biological mapping and sampling
- Seismic experiments
- Deployment of a seismological array

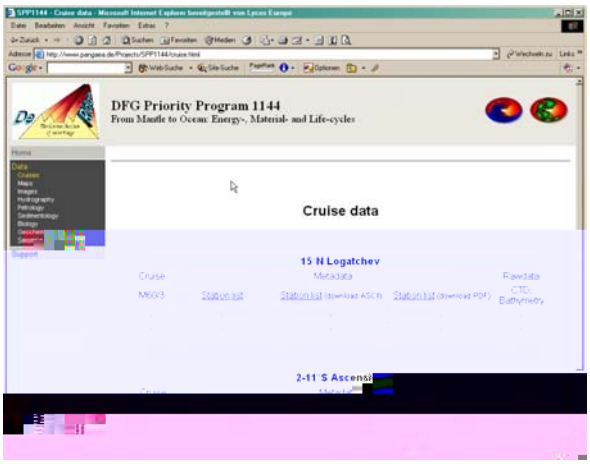
A cruise proposal for the geophysical studies in the 15°N region will be coordinated by Ingo Grevemeyer, IFM-GEOMAR Kiel, and a cruise proposal for further time series sampling and long-term monitoring of the Logatchev field will be coordinated by Thomas Kuhn, IFM-GEOMAR Kiel.

To characterize the Mid-Atlantic Ridge segments between 4° and 11°S , we need to consider the following requirements for a cruise in 2007:

- Seismic stson on Ascension
- Drilling
- Bathymetric mapping
-

fields with regional sub divisions. The site will be linked to the SPP1144 homepage when the final layout is accepted.





Upcoming events

Meteor-cruise M62/4

M62/4 will start on 1 October 2004 from Mindelo and finish 3 November 2004 in Recife. Chief scientist is Tim Reston from IFM-GEOMAR. The target of the proposed investigations is the region of the Ascension Transform system at about 7°S and the spreading segment immediately south of this transform (Figure M62/4-3). The Ascension Transform is actually a "double transform fault" consisting of two parallel transform fault / fracture zone systems (referred to here as the North Ascension Fracture Zone - NAFZ - and the South Ascension Fracture Zone - SAFZ) sandwiching a very short segment. Such double transform faults are a fairly common feature of the MAR, particularly in the South Atlantic, but are as yet not fully understood. The segment within the Ascension double transform forms an elongated massif characterised by transform-parallel corrugations that can be followed for over 100 km. If this corrugated surface represents the slip surface of a major fault, then this fault must have been active for several million years. If fault activity occurred during largely amagmatic spreading within the segment, this in turn would imply that virtually the entire segment within the double transform must correspond to exhumed mantle rocks. Apart from the collection of bathymetric data and of gravity data, little geophysical work has been carried out here. As a result, this forms one of the main foci of this study.

Meteor-cruise M62/5

M62/5 is divided in two legs. M62/5A (chief scientist is C. Devey) is scheduled to depart from Recife on the 7 November 2004 and end in Ascension on the 3 December 2004, whereas M62/5B (chief scientist is K. Lackschewitz) will start at 5 December 2004 from Ascension and end in Walvis Bay on the 30 December 2004.
The aim of the cruise is to determine, using the British TOBI device, amongst others,

the volcanological and tectonic nature of the seafloor in a portion of the Mid-Atlantic Ridge between 4-11°S. Several segments which are separated from one another both by transform- and non-transform faults will be studied. Using the BRIDGET probe mounted on TOBI, we will be able to collect real-time nephelometry coincident with the side-scan coverage. With this basic information about the nature and activity of the seafloor, we will use a ROV, dredges and corers to sample the seafloor and CTD to sample the water column, analyses for methane in the water will be carried out on board, helium determinations will be made in the laboratory after the cruise. Additionally we will make LADCP and XCP measurements to examine the vertical mixing within the water column above the hydrothermal vent fields.
Although this work is relatively equipment- and time-intensive, it is the best way to get a maximum of information during this cruise.

Schedule and main objectives of Meteor cruises M64/1 and M64/2

transfer" took place at the Department of Geosciences of the Free University of Berlin under the leadership of Professor Dr. P.E. Halbach.

The course was based on the Dahlem Conference "Energy and Mass Transfer in Marine Hydrothermal Systems" which was carried out very successfully in November 2001, with the results presented in the Dahlem Workshop Report 89 as a hardcover book (ISBN 3-934504-12-4). Already then we had the intention to present the scientific contents of the conference as high-level teaching course. This was now realized as the Dahlem Science Course.

Besides the help of the president of the FU Berlin this course was also supported by the German Mineralogical Society and DeRidge.

The 25 participants came from all over Germany and were students of higher semesters, Ph.D. students as well as scientists with a Ph.D. degree. Most of the 10 lecturers from Germany and France had already participated in the Dahlem Conference itself.
The course took place all day from Monday to Friday, and was credited with 2 ECTS (European Credit Transfer System) points.
Besides the papers for the respective talks and/or practical courses each participant received a copy of the Dahlem Workshop Report 89 which served as basis for the course.
The compact course was scientifically demanding, and probably also rather exhausting for some since it meant 8 hours of concentration every day. This included practical exercises, 2 video presentations and also several coffee breaks which were used for intensive discussions. "This is real good science, but exhausting" was the comment of some of the young scientists.

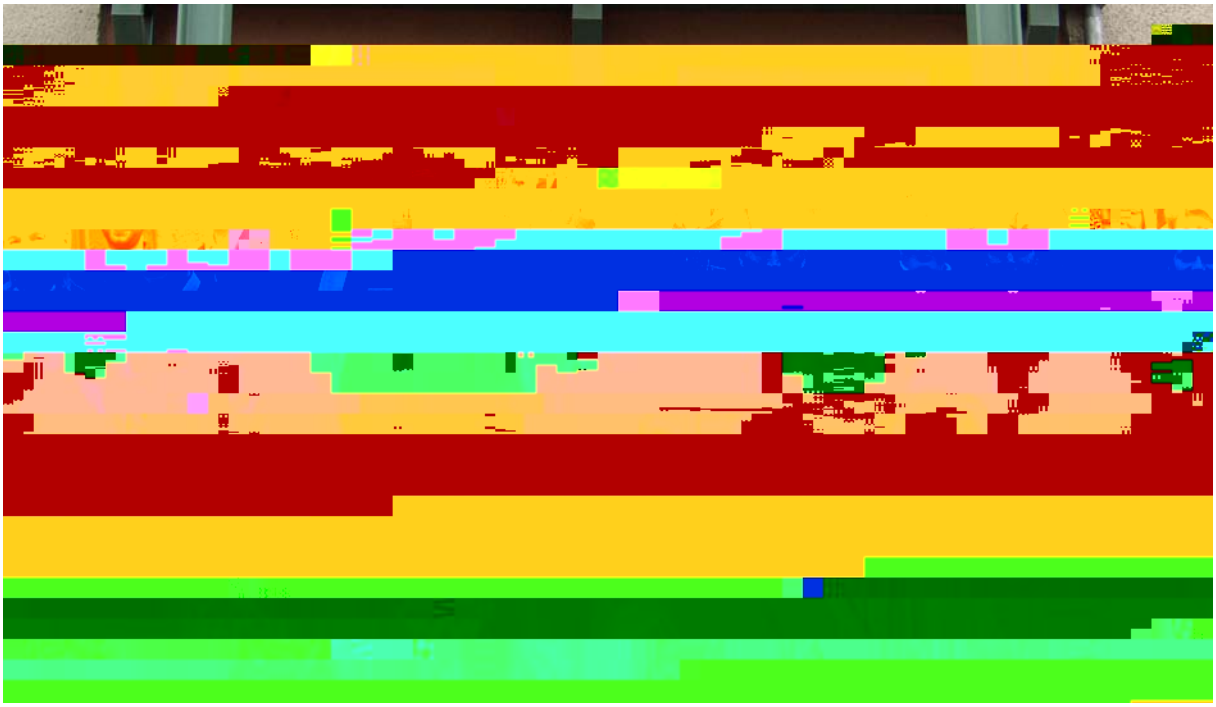
This was the first time that the FU Berlin tried to turn the topic of a Dahlem Conference into a compact teaching course. Thus, the course had important pilot character. This was also stressed by the Vice President of the FU, Prof. Keupp, when he gave an introductory talk on Monday, March2, as well as by the Vice Dean of the geoscientific Department, Prof. Heubeck.

The individual talks dealt with set-up and structure of the oceanic crust, petrography of the oceanic crustal rocks, tectonic processes, ophiolite formation and the appearance of ophiolites, heat budget and heat transport, the hydrothermal circulation model, composition and development of hydrothermal fluids, material balancing, as well as ore deposit formation under defined conditions and, finally, the evolution of a specifically adapted fauna. An important part was the hydrothermal reaction modelling which was taught practically working with the PC. Without modelling, the geochemical and geophysical study of such complex systems is not feasible any more. The chemical transport and heat dissipation under increased hydrostatic pressure characterize these specific conditions. To understand these processes in time and space including bioproductivity is a big challenge to modern sciences. Highlights were also the video shows; a video about hydrothermal biology which will soon appear in IMAX cinemas, could be seen even if only in parts, and in 2-dimensions.

The lecturers, internationally recognized experts taught the sometimes very complex matter extremely well, also with excellent figures, and presented the latest state of

the art; the participants have shown their great interest and motivation also by their steady readiness to give critical questions.
We could show that it makes a lot of sense, and that it is successful to give a course for young scientists based on a Dahlem Conference, especially if the topics have such interdisciplinary character. Open questions, which had already been discussed during the Dahlem Conference were taken up again; some could be answered in the meantime, others will be an incentive for the participants to further discussions.

We would like to thank the Free University of Berlin, the Dahlem Conferences, DMG and DeRidge who helped to realize the course.



Participants, students of higher semester, Ph.D. students and scientists with a Ph.D. degree, with 5 lecturers of the Dahlem Science Course at the FU Berlin

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InterRidge-Office

The relocation of the InterRidge chair Colin Devey and his group to the Leibniz Institut für Meereswissenschaften in Kiel also meant moving the InterRidge Office. This was somewhat unfortunate timing as the InterRidge Steering Committee meeting was held shortly afterwards in Korea. Thanks to great work by the Coordinator Katja Freitag all went smoothly however. Important information from the Steering Committee meeting of direct relevance to the SPP is:

- The initiation of a working group “Biogeochemical interactions at deep-sea vents” to be led by Nadine Le Bris (IFREMER) and including Antje Boetius as a German representative.

- The decision, for the first time since its inception in 1993, for InterRidge to raise its fees to reflect the general price (and particularly salary) increases over the last decade. It was decided that principle member fees will be increased by US$ 5000 as soon as feasible but at the latest by the time the office leaves Germany. The new fee structure will therefore look as follows:
    - Principle Members: US$ 25.000
    - Associate Members: US$ 5.000
- As a Principle Member, Germany has the right to two seats at the Steering Committee meeting. To achieve a good disciplinary balance, the Steering Committee requested that Nicole Dubilier (MPI Bremen) fulfil this role. She will also become a member of the Biology Working Group, allowing synergies with meeting organisation to be used to the best effect.

You can find further information about all these issues, including the full Steering Committee report, on the InterRidge website www.interridge.org.

SPP 1144 Newsletter is published bi-annualy by

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We thank P. Halbach, T. Kuhn, T. Reston and H.-J. Wallrabe-Adams for their contributions.