

Hydrothermal Fluids at the Mid-Atlantic Ridge (15°N and 4-11°S) as Media for the Transport of Energy and Mass from the Crust into the Hydro- and Biosphere

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Within this evaluation project of several research cruises to the Mid-Atlantic Ridge (MAR) within the SPP 1144, the hydrothermalism at 15°N (Logatchev hydrothermal field) and at 4-11°S and its interrelation with the geological and biological environment will be investigated. This work is a continuation of a time-series study started with cruise M60/3 in 2004, which aims at investigating the short-to-medium-term variability of fluid emanations in different hydrothermally active settings. Part of the work will deal with the dependency of the fluid and mineral composition of the tectonic activity and the type of basement rock (basalt, peridotite). Another main focus will be put on geo-bio interfaces and the investigation of chemical species (especially sulfur species and redox speciation and complexation of metals, dissolved organic compounds and their control on heavy metal behaviour) in the fluids. Furthermore, boiling and phase separation in the fluids and its consequences for mineral formation and the associated ecosystems will be investigated. The focus on two different areas will allow us a comparison of hydrothermally active sites at the northern and southern MAR, which are separated from each other by large fracture zones.