

Hydrothermal activity at mid-oceanic ridges is an important factor for the heat and mass transfer between the mantle and the ocean. Little information is available on the life-span of hydrothermal systems, their temporal variability or changes of the chemistry of hydrothermal solutions with time. Based on age determinations of hydrothermal deposits by means of natural radionuclides, the duration and periodicity of hydrothermal activity shall be investigated in the Logatchev field and, for the first time, in hydrothermal fields at 15 °N at the Mid-Atlantic Ridge, which are due to serpentinization of ultramafic rocks. Based on the geochemistry and the ages of the hydrothermal deposits information on the variability of the hydrothermal fluids during the geological past will be obtained. The importance of the residence time of hydrothermal fluids in the crust for their chemical composition will be investigated for the different fluids venting at the Logatchev field. These studies are based on sampling of fluids and hydrothermal precipitates which will be conducted during the FS Meteor cruise M60/3 along the Mid-Atlantic Ridge between 14°45 N and 15°05 N.