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Abstract

From February 13, to June 13, 1999 the German research Vessel METEOR performed cruise M 41 consisting of four legs in the South Atlantic. The cruise started in Málaga (Spain) and continued with stops in Libreville (Gabon), Vitória (Brazil), and Salvador de Bahia (Brazil) to its final destination Las Palmas (Spain). This "South Atlantic 1998 Expedition" was mainly conducted by scientists of the Geosciences Department in Bremen and the GPI in Kiel and continued a long-term geoscientific study for the reconstruction of mass budgets and current systems in the South Atlantic during the late Quaternary (Sonderforschungsbereich 261 at Bremen University). Main objectives were the recovery of sediment material for sedimentological, micropaleontological, geophysical and geochemical analyses, the investigation of sedimentary structures by geoacoustic methods, the recovery and redeployment of various sediment traps to investigate particle fluxes and current patterns in the water column, *in situ* analyses of biogeochemical processes at the sea floor, mapping and sampling of a Mid-Atlantic Ridge area, and oceanographic investigations. This report summarizes the main goals of the different working groups, a complete list of all stations and gears employed on each leg and the preliminary results as obtained during the cruise. The cruise was funded by the Deutsche Forschungsgemeinschaft (German Science Foundation).

Zusammenfassung

Vom 13. Februar bis zum 13. Juni 1999 fand die Reise M 41 des Forschungsschiffes METEOR mit insgesamt vier Fahrtabschnitten im Südatlantik statt. Die Expedition begann in Málaga (Spanien) und setzte sich mit Stops in Libreville (Gabun), Vitória (Brasilien) und Salvador de Bahia (Brasilien) bis zum Zielhafen in Las Palmas (Spanien) fort. Die "1998er Südatlantik Expedition" wurde im wesentlichen von Wissenschaftlern des Fachbereichs Geowissenschaften in Bremen und des GPI in Kiel durchgeführt. Das Hauptziel bestand in der Weiterführung der Arbeiten im Sonderforschungsbereich 261 (Universität Bremen) zur Rekonstruktion von Stoffhaushalt und Stromsystemen im Südatlantik während des Spätquartär. Die Schwerpunkte der Arbeiten umfaßten die Sedimentbeprobung für sedimentologische, mikropaläontologische, geophysikalische und geochemische Untersuchungen, die Aufnahme von Sedimentstrukturen mit geoakustischen Methoden, das Aufnehmen und Wiederaussetzen von Sedimentfallen zur Untersuchung von Sedimenttransport und Strömungsverhältnissen in der Wassersäule, die *in situ*-Erfassung von biogeochemischen Prozessen am Meeresboden, die Kartierung und Beprobung eines Gebietes im Bereich des Mittelatlantischen Rückens sowie ozeanographische Untersuchungen. Dieser Bericht faßt die wichtigsten Arbeitsziele und die ersten, an Bord erzielten Ergebnisse der einzelnen Arbeitsgruppen zusammen. Er enthält weiterhin eine komplette Übersicht über die bearbeiteten Stationen und die dabei eingesetzten Geräte. Die Expedition wurde durch die Deutsche Forschungsgemeinschaft gefördert.