



The Marine Carbon cycle along the Galathea route

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A world wide Danish cruise from the North Atlantic to the South Pacific and back is planned to start in August 2006 and last until April 2007. The Cruise is named Galathea III and is the third within the past 150 years. Scientists from 5 different institutions in Denmark co-operates in a carbon cycle project: "The Marine Carbon cycle from North to South along the Galathea route", to be carried out on the Galathea III expedition. The purpose of this study is to investigate the role of the ocean in absorbing CO₂ introduced to the atmosphere through human activities. Measurements will be made continuously onboard the ship over the entire cruise track. In this manner, it will be possible to develop a global estimate of the role of different ocean regions in ocean-atmosphere carbon exchange. Such studies are crucial in order to improve modelling activities aimed at predicting future atmospheric concentrations of CO₂ and in order to discern the role of the oceans in mediating global climate change. Physical and chemical measurements will be made in the atmosphere. In the ocean, measurements will be made on biological processes relating to the turnover of carbon in surface waters. In addition, physical, chemical and biogeochemical measurements will be made in surface waters. Many measurements can be made while the ship is sailing (on air and water pumped onboard). For others, the ship will either have to stop and take samples or slow down in order to be able to tow instruments after it. The study is linked to a number of international research initiatives and the Galathea route gives an absolutely unique opportunity to study the ocean on the global scale.