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Tuesday, 2nd February, 2016, 1:30 p.m. (13:30h)

GEOMAR Lecture Hall West (R.54) | Düsternbrooker Weg 20, 24105 Kiel

Atmospheric Deposition: Impact on Ocean Biogeochemistry



The interactions between atmospheric deposition, marine biogeochemistry, carbon export and sequestration in the deep ocean and their feedbacks on climate have been recognized as an important field of research over the past twenty years.

The ocean receives from the atmosphere a broad range of particles of continental origin, macro- and micronutrients, and toxic elements. Following complex processes between the dissolved and the particulate phases during their transport in the atmosphere and after their deposition at the ocean surface, these inputs represent a source of new nutrients with the potential to impact microorganism [such as phytoplankton and bacteria] activity. The resulting CO₂ exchanges may modify global climate on long time scales. This lecture assesses current knowledge of the impact of atmospheric deposition on the biogeochemistry in particular in the vast low nutrient low chlorophyll ocean. Data obtained during field and laboratory experiments based on original setups such as large clean mesocosms and minicosms will be examined. This lecture also discusses how experimental data along with modeling approach are necessary to fully understand the links between atmospheric deposition and global/regional biogeochemical cycles.