



Physical Research Laboratory, Ahmedabad

Special Colloquium 19-03

- Speaker:** Prof. Dr. Hermann W. Bange
Head of Research Group "Trace Gas Biogeochemistry", GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany
- Title:** " Non-CO₂ Trace Gases in the Ocean "
- Time:** Monday, 18 February 2019, 16.00 hrs
- Venue:** K.R. Ramanathan Auditorium, PRL

Abstract

Oceanic areas (including open ocean, continental shelf, estuaries and coastal upwelling) emit significant amounts of climate-relevant trace gases such as nitrous oxide (N₂O), methane (CH₄), carbon monoxide (CO) and dimethyl sulphide (DMS). Oceanic trace gas production is mainly driven by various (micro)biological processes which occur in both the water column and in the sediments. Emission estimates are, therefore, associated with large uncertainties resulting from the complex interactions of biological, chemical and physical processes and the poor temporal and spatial coverage of measurements. An overview about our current knowledge on non-CO₂ trace gas cycling in the ocean will be given.

The Speaker

Prof. Hermann Bange is heading the Working Group 'Trace Gas Biogeochemistry' of the Marine Biogeochemistry Research Division at GEOMAR, Kiel, Germany. Before joining GEOMAR, he worked at MPI for Chemistry, Mainz for a decade during 1991-2000. Currently he is co-chairing the 'Science & Research' working group of the 2nd International Indian Ocean Expedition program (IIOE-2) and the German national IIOE-2 committee. He is a full member of the German collaborative project SFB754 'Biogeochemistry-Climate Interactions in the Tropical Ocean'. Under this program in the last decade, Hermann and his coworkers have done pioneering work on the ocean deoxygenation and its impact on biogeochemical cycles. He is the coordinator of the Boknis Eck Time Series Station (Eckernförde Bay, SW Baltic Sea) and MEMENTO (the Marine Methane and Nitrous Oxide Database). He was coordinator of Surface Ocean Processes in the Anthropocene (SOPRAN) program. In this program, several high impact articles lead by Prof. Bange have changed our understanding of the mechanisms and rates of ocean-atmosphere material exchanges. During his MPI days, Hermann had participated in several cruises to the Arabian Sea as part of the German JGOFS - Arabian Sea Process Study. He has done seminal work on the N₂O and methane emissions from the Arabian Sea. His research interests include the biogeochemistry and emissions of oceanic trace gases such as nitrous oxide, methane, dimethyl sulphide, and carbon monoxide as well as measurements of short-lived compounds of the nitrogen and sulphur cycles (nitric oxide, hydroxylamine, DMSP and DMSO). He is also presently involved in the development of new sensor technology for dissolved trace gases. To this end, his working group is operating world-wide and takes part in ship campaigns to the major ocean basins of the Atlantic, Arctic, Pacific and Indian Oceans as well as to the Baltic Sea.

Tea at 15:30 hrs
ALL ARE WELCOME

