MARIE THARP LECTURE SERIES FOR OCEAN RESEARCH | NO.23

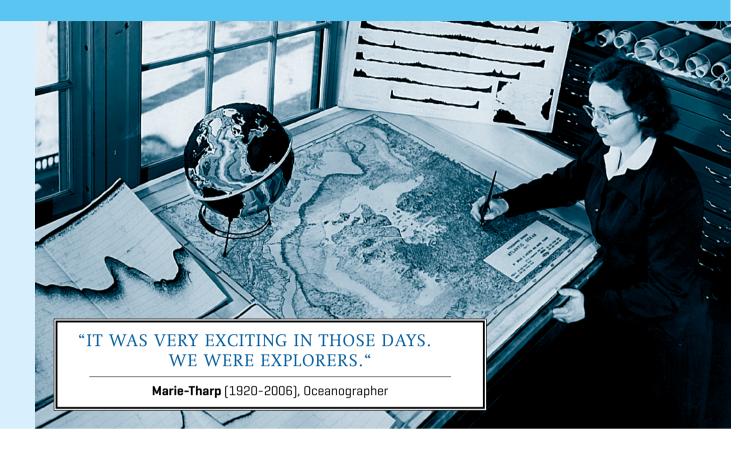




Prof. Dr. Anya M. Waite

Head, Polar Biological Oceanography Section

Alfred Wegener Institute Helmholtz Centre
for Polar and Marine Research, Germany



Thursday, 24th May 2018, 01:15 p.m. (13:15h) **GEOMAR Lecture Hall West (R.54)** | Düsternbrooker Weg 20, 24105 Kiel

Physical-Biogeochemical Coupling in Polar Regions: Refining New Nitrogen Fluxes



Ecosystem biomass in the Arctic Ocean is limited by bioavailable nitrogen (N) concentrations. However, there remain key unknowns in the Arctic nitrogen (N) cycle, particularly in the context of biogeochemical-physical coupling under global change.

Here we review the current understanding of new N fluxes into and within the Arctic and assess the potential for new physical and bio-

geochemical data to constrain estimates of current and future fluxes. Key injection processes of interest include N-fixation, double diffusion, turbulent mixing, remineralization of allochthonous dissolved organic matter and sub-mesoscale/mesoscale processes. We briefly consider N losses, including denitrification and particle export. We identify the scales where physical – biogeochemical coupling is particularly important for N injection, and export, of new nitrogen into and out of the euphotic zone.



