Physical Research Laboratory

Tuesday Seminar

Understanding Aluminium Biogeochemical Cycle in the Indian Ocean

Abstract

Deposition of mineral dust over oceans and their subsequent partial dissolution in seawater is an important mechanism for supply of bio-essential trace metals to the open oceans. Due to dearth of direct estimates of dust deposition fluxes over oceans (especially in most remote regions such as Southern Oceans), development of proxy to dust supply over global oceans is imperative. Dissolved aluminium (dAl) in the surface waters of remote oceans: 1) is majorly brought through eolian input, 2) has short residence time (few weeks to ~4 years) and 3) is not bio-limiting and redox insensitive. Therefore, dAl distribution in the surface waters of open oceans has been historically and recently used to model the dust deposition fluxes over oceans. However, dAl data in the world oceans is sparse with Indian Ocean among the most under sampled region. Also, dAl concentrations have shown large inter-basin fractionation due to the varying sources (eolian, sedimentary, etc.) and oceanic processes, such as water mass advection, differential scavenging, etc. Evidences of incorporation of Al from the water column to biogenic opal are also present and hence Al coupling with the Si-cycle in seawater is suspected. Together, all the above mentioned processes, suggest for the comprehensive evaluation of biogeochemical cycling of Al in seawater for more refine assessment of dAl derived dust deposition fluxes.
In this talk, I shall discuss different processes, source and sinks of dAl to the oceans which govern its distribution. Also, recently established fluorimetric method for the detection of nanomolar levels of dAl in seawater and preliminary results achieved from northern Indian Ocean will be presented.

Speaker: Mr. Naman Deep Singh
JRF, GSDN

Date	Time	Venue
27-June-2017	16:00 hrs	Ground Floor Lecture Hall

All are invited to attend and participate in discussion

Tea at 15:30 hrs

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