

## Dissolved Iron in the Northeastern Indian Ocean

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Iron (Fe) is an essential micro-nutrient for primary production and has been found limiting productivity in 30% of world Oceans. As a part of GEOTRACES – INDIA programme a total of 29 full vertical profiles were collected during 2013 and 2014 in the northeastern Indian Ocean. Dissolved Iron (DFe) was measured by using flow injection system based on chemiluminescence method.

The DFe shows nutrient type behaviour more or less with surface depletion ranging from 0.11 nM to 0.51 nM. High surface concentrations (~0.5 nM) of DFe has been observed in northern stations compared to the southern stations of Bay of Bengal (BOB) and in the Andaman Sea. High DFe in northern BOB could be due to its supply from Ganga-Brahmaputra river system either through dissolved or particulate phase. A clear maxima (~1.2 nM) in the DFe values of intermediate waters (200m – 1000m) coinciding with the oxygen minima observed from 18°N to 2° N is due to the release of iron from the Fe – Mn hydroxides from the high particulate matter from the Ganga – Brahmaputra river system. Since, Andaman Sea is a back arc basin, DFe (0.8-0.9 nM) in its deeper waters is similar to that in BOB of 1200m - 1500m. Remarkable feature observed in this study is enrichment of DFe (~ 2.7 nM) in deeper samples along sunda trench could be associated to the submarine volcanism as currently the Indian subcontinent plate is subducting under the Burmine plate. A maximum concentration of DFe ~27 nM has been observed at one station sampled at known hydrothermal vent field situated at 25 °S 70 °E.