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## Influence of hypoxic upwelled waters on the distribution of trace metals in the surficial sediments of the Cochin estuary.

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Coastal and estuarine hydrography along with trace metal (Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, and Zn) distribution in sediments were studied in the Cochin estuary (southwest coast of India) during pre-upwelling (April 2016) and upwelling (July 2016) periods. Oxygenated, high saline and low nutrient coastal waters were found (30kms) in the estuary during the pre-upwelling period where coastal upwelling in the Arabian Sea brought cold, high saline, nutrient-rich low oxygen waters intruded 20 km in the estuary. The concentrations and distributions of trace metals and organic matter in the sediments are found to be high during pre-upwelling and it is very low during upwelling periods. Marginal variation in Mn and Fe and comparatively low values of Cu, Cd, Zn, Pb and almost same values of Co, Cr, Ni were found during upwelling period than the pre-upwelling period. The mobilization of sediment bound metals during hypoxia/anoxia is high, nevertheless, the results highlight particular problems for management in areas where hypoxia might occur. The release of metals exacerbating already high loads or resulting in adverse effects on biological life are possible or even highly probable.

### Position

Postdoc

### Affiliation

CSIR-National Institute of Oceanography, Regional centre kochi, INDIA

### Email Address

dlpmchem@gmail.com

### Are you a SFB 754 / Future Ocean member?

No

**Primary author(s)** : Dr G D, MARTIN (Kerala University of Fisheries and Ocean studies,INDIA); Dr PARENKAT MONY, DEEPULAL (CSIR-National Institute of Oceanography, INDIA)

**Presenter(s)** : Dr PARENKAT MONY, DEEPULAL (CSIR-National Institute of Oceanography, INDIA)

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