Séminaire de V.V.S.S. Sarma au LOCEAN

Nom : Séminaire de V.V.S.S. Sarma au LOCEAN

Titre : Variability in concentrations of nutrients and trace gases in the groundwaters along the Indian coast

Laboratoire :

Nom du conférencier :

Son affiliation :

Date et heure : 22-05-2019 11h00

Lieu : Campus de Jussieu, salle de réunion LOCEAN, tour 45/55, 4eme étage

Résumé :

The concentrations of nutrients and trace gases (N_2O, CH_4 and CO_2) were measured at 90 locations along the Indian Coast (<0.5 km from the coast) to quantify their source to the coastal regions. The concentrations of both nutrients and trace gases are several orders of magnitude higher in the groundwater than that of marine waters. Higher concentrations of nutrients (dissolved inorganic nitrogen, phosphorus and silicate) are observed in the groundwater along the east coast than west coast of India and it is consistent with the higher agricultural activities and human-settlements in the former region suggesting higher contamination of groundwater due to human interferences. Similarly, higher concentrations of N_2O and CH_4 are observed in the groundwaters of east coast whereas higher CO_2 levels were observed in the west coast. Based on the radium isotopes, the exchange rates of nutrients and trace gases were estimated in the Godavari estuary and found that about 35% of the coastal nutrients and trace gases were supported through Submarine Groundwater Discharge (SGD). Based on the microcosm experiments, the addition of nutrients from the groundwater changed the phytoplankton composition in the Godavari estuary and coastal Bay of Bengal. It is therefore hypothesized that plankton diversity along the Indian coast may be significantly governed by SGD. The contribution of SGD discharge to the Indian coastal waters and their influence on coastal plankton community is being evaluated.

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