

Distribution of dissolved aluminium (dAl) in seawater at Pulau Perhentian, Terengganu

ABSTRACT

The distribution of dissolved aluminium (dAl) was determined in seawater collected from Pulau Perhentian in November 2015 and April 2016, in order to identify a possible effect of the Northeast monsoon on dAl. Seawater sample profiles were collected at five different stations at 4-5 different depths. The concentration of dAl was determined directly by using cathodic stripping voltammetry on the hanging mercury drop electrode. This method was optimized in order to fit the determination of dAl concentration in seawater at this study area. During the measurements in November 2015, the concentration of dAl was found to be between 31.1 $\mu\text{g/L}$ and 98.7 $\mu\text{g/L}$ at that surface layer, and was found to be increasing with depth. On the other hand, the concentration ranged between 30.9 $\mu\text{g/L}$ and 167.3 $\mu\text{g/L}$ at surface layer and decreased with depth in April 2016. This indicates that the distribution of dAl throughout the water column was different between the two periods. It suggests that there was a possible source of Al from the surface sediment due to the high current turbulence during the Northeast monsoon season in this area, as mentioned by previous studies.

Keyword: Dissolved aluminium; Seawater; Biological uptake; Atmospheric input; Monsoon

