

Distribution of dissolved Fe, Al and Cu at Perhentian Island, Terengganu

ABSTRACT

Concentrations of dissolved Fe, Al and Cu were studied in seawater profile collected from Perhentian Island, Terengganu in two different seasons; during pre-monsoon in October 2014 and during post-monsoon in April 2015. Surface concentrations ranged from $227.36 \pm 1.72 \mu\text{g/L}$ to $1014 \pm 9.09 \mu\text{g/L}$ (pre) and $292.38 \pm 2.84 \mu\text{g/L}$ to $546.89 \pm 5.38 \mu\text{g/L}$ (post) for Fe, $16.65 \pm 0.19 \mu\text{g/L}$ to $46.39 \pm 0.66 \mu\text{g/L}$ (pre) and $95.32 \pm 0.01 \mu\text{g/L}$ to $259.98 \pm 0.04 \mu\text{g/L}$ (post) for Al and as for Cu, its concentration was from $1.14 \pm 0.01 \mu\text{g/L}$ to $2.81 \pm 0.01 \mu\text{g/L}$ (pre) and $1.73 \pm 0.01 \mu\text{g/L}$ to $4.00 \pm 0.04 \mu\text{g/L}$ (post). Meanwhile the concentrations for dissolved metals during October 2014 were in the range of $80.80 \pm 0.71 \mu\text{g/L}$ to $1014.28 \pm 9.09 \mu\text{g/L}$ for Fe, $9.94 \pm 0.11 \mu\text{g/L}$ to $238.22 \pm 2.22 \mu\text{g/L}$ for Al, and $0.81 \pm 0.01 \mu\text{g/L}$ to $2.81 \pm 0.01 \mu\text{g/L}$ for Cu respectively. In April 2015, dissolved Fe concentrations was in the range of $167.20 \pm 1.59 \mu\text{g/L}$ to $546.89 \pm 5.38 \mu\text{g/L}$, meanwhile for Al was between $60.97 \pm 0.03 \mu\text{g/L}$ to $259.98 \pm 0.04 \mu\text{g/L}$ and for Cu was $1.73 \pm 0.01 \mu\text{g/L}$ to $5.81 \pm 0.05 \mu\text{g/L}$. This study suggested the increasing concentration of these dissolved metal during post monsoon event was a result from rapid mixing and strong turbulence of water current during the season.

Keyword: Dissolved metals; Northeast monsoon; South China Sea; Chelex-100