



## **The Evolution of Meander River in Tropical Mangrove Forest**

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Meander river is an important setting that preserved the history of landscape evolution of mangrove forest. Two short core sediments were sampled at the neck cutoff (core KR1, 122cm) and inside of meander (core KR2, 98cm) of Sungai Kerteh mangrove forest, Peninsular Malaysia to understand the evolution of this environment during the recent past. We investigated and compared the profile of sediment mean size, selected elements (Fe, Na, Mg, Mn, Sr and Ba) and total organic carbon (TOC) between neck cutoff (NC) and inside of meander (IM). Sedimentation rate at both sites were determined based on the  $^{210}\text{Pb}$  activity. Smaller standard deviation of sediment mean size at the NC ( $4.37 \pm 0.51 \phi$ ) than IM ( $4.43 \pm 1.76 \phi$ ) indicates a significant change in water velocity of this setting. The mean concentrations of elements in this study were in decreasing order as follows: Fe > Na > Mg > Mn > Ba > Sr. Higher average value of TOC was recorded in the IM ( $2.74 \pm 1.42\%$ ) than NC ( $1.14 \pm 0.46\%$ ) site. A small change in sedimentation rate between upper ( $0.41 \text{ cm.yr}^{-1}$ ) and bottom ( $0.50 \text{ cm.yr}^{-1}$ ) part of core KR1 suggest that there was no significant difference in river water velocity at the NC area. On the other hand, higher sedimentation rate at the upper ( $0.60 \text{ cm.yr}^{-1}$ ) than bottom ( $0.39 \text{ cm.yr}^{-1}$ ) part of core KR2 reflect the reduction of river water velocity at the IM area due to the formation of new river flow near the NC site. This condition caused an increasing accumulation pattern of selected elements and TOC from the depth  $\sim 60 \text{ cm}$  towards coretop segment at the IM site. Therefore, this study is important in providing the initial information of landscape evolution effect on the geochemistry of sediment in the tropical mangrove forest.