**Suspended Particulate Matter Concentration Retrieval in Tropics Estuary from Landsat ETM Data**

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**Summary**

Suspended Particulate Matter (SPM) is essentially related to the total scattering of particles in the water column. It play role as transport medium for pollutants, total load of organic and also inorganic substance in the water phase. Several authors have provided the empirical relationship between SPM concentration and Landsat ETM reflectance based on archived water quality data. Yet, most of the relationship equations were developed from other than in the equatorial tropics areas. This paper described the mapping of SPM spatial patterns in Pahang River Estuary, Malaysia using Landsat ETM image. Based on the strong relationship between Landsat near-infrared (NIR) band and arhived SPM data, an empirical relationship have been developed for Pahang River Estuary with a standard error of (SE) 5mg/L. It is considered that following linear equation:

SPM (mg/L) = 0.535 x L (TM4) + 59.66

where L (TM4) is radiance of ETM NIR band 4 was developed under tropics atmospheric conditions and can be used for monitoring SPM concentration in tropics area. The maximum and minimum SPM concentration during Northeast monsoon was 147.29mg/L and 127.38mg/L with 4% of maximum percentage of standard error. The maximum and minimum SPM concentration during Southwest monsoon was 91.44mg/L and 82.99mg/L with 8% of maximum percentage of standard error. Thus, results showed that Pahang River Estuary exhibited higher SPM concentration during Northeast monsoon than Southwest monsoon.

Keywords: Suspended particulate matter, Pahang River Estuary, Landsat ETM, historical water quality data