Suggested Topic: Data Processing

**Spectral Library of Submerge Aquatic Vegetation (Seagrass) using High Resolution Satellite Imagery**

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**ABSTRACT**

This study is to determine the spectral library of submerged aquatic vegetation (seagrass) using high-resolution satellite imagery. Spectral library allows the detection and identification of the coastal materials from spectral characteristics. These materials have their own biological and chemical characteristics that uniquely differs from each other. Therefore, these spectral information can be used to identify submerged aquatic vegetation (SAV) by focusing on seagrass. The sea truth data will be collected using spectroradiometer while image Worldview-2 (WV2) will be used for the image processing. The location study where SAV are used in the study is located in Merambong shoal, Johor Straits, Malaysia. The spectral library data will be built from the spectroradiometer and the ROI (Region of Interest) method will be applied to the satellite image to extract the respective statistics and spectral plots from satellite image after the pre-processed for radiometric, atmospheric and water column correction. The retrieved spectral characteristics from WV2 are then compared with the corresponding spectral libraries and the image spectra, adapting Spectral Feature Fitting (SFF) to determine the spectral match or vice versa. In addition, this spectral library is beneficial in giving identification of seagrass rather than on solely based spectral analysis itself, hence provide a best tool for fine identification of SAV pattern recognition.

**Keywords:** Spectral library, Submerge Aquatic Vegetation (SAV), spectroradiometer, high resolution satellite imagery