

A7

**Preliminary estimation of chlorophyll concentration in a tropical coastal lagoon in Sri Lanka using satellite data and in-situ measurements**

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**Abstract:** A high-resolution chlorophyll-a concentration (Chl-a) map in Puttalam lagoon, Sri Lanka, was generated by a combination of in-situ data, MODIS Chl-a data, and ASTER band 1/2 ratio data. The in-situ data obtained from January 2008 to January 2009 in the lagoon were used for determination of a correction equation for the MODIS Chl-a data produced by the OC3 algorithm. A regression equation between the corrected MODIS Chl-a and the ASTER band 1/2 ratio was used for generation of the high-resolution Chl-a map using the ASTER data. High-resolution ASTER Chl-a distribution maps derived more precisely will be useful for the determination of localized effects in tropical lagoon environments.

**Keywords:** chlorophyll-a, tropical lagoon environment, in-situ measurement, MODIS OC3 algorithm, ASTER/VNIR