# A New Approach to Case 2 Water Satellite Sensing on the Pearl River Estuary, China

LI Yan[1,2], HUANG Wei[2] and DENG Ming[1]

1. Second Institute of Oceanography, Hangzhou 310012, CHINA
2. CCAR, Hong Kong University of Science and Technology, Clear Water Bay, Kawloo, Hong Kong, CHINA

**Abstract**

A new algorithm was developed to retrieval suspended sediment, chlorophyll-a and yellow substance from the Case 2 water from SeaWiFS satellite imagery. The atmospheric effect is removedsimply by linear response from water-leaving to satellite-detected reflectance, in the gradient for correlation curve between certain two channels in the SeaWiFS images. This gradient could be considered as the ratio of derivative spectra of such two channels. Coefficient for this transit is depended on a ratio for such two channels in atmospheric transmittance including ozone and diffuse transmittance. The gradient, K, is a function of the absorption and backscatter confections of object water layer, and mathematically represented as $K = Kz\ (a_1 + b_{b1})^2 / (a_2 + b_{b2})^2$. The formula links suspended sediment, chlorophyll-a and yellow substance with gradients between all couples in SeaWiFS channels, were deduced and it performed as an acceptable algorithm in the Case 2 water dominated estuary where Kz is limited within certain range and could be regarded as a constant. Field and remote sensing studies on sediment and chlorophyll-a are compared for the Pearl River estuary, majority based on data that PREPP first cruise carried out during July 1999. New calibrating data will be collected during the coming PREPP second cruise being starting in Jan 2000.

**Keywords**

Marine remote sensing, Case 2 water, Chlorophyll-a, SeaWiFS