

Applying Multi-temporal Satellite Imageries to Estimate Chlorophyll-a
Concentration in Feitsui Reservoir using ANNs

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Abstract

The artificial neural networks (ANNs) were adopted to improve the monitoring capability of water quality in a reservoir using multi-temporal satellite imageries. Simultaneous measurement of chlorophyll-a (Chl-a) concentration along the Feitsui Reservoir, the primary water supply of Taipei City, was conducted by ferryboat. Those ground measured values were used to calibrate empirical functions with multiple spectral parameters from the Landsat 7 ETM+ satellite imageries. The predictive capability of ANNs approach was evaluated and showed satisfied results.

Keyword : Artificial neural networks (ANNs) ; multi-temporal satellite imagery; chlorophyll-a(CHl-a); Feitsui Reservoir