

## **MODIS-based remote sensing of suspended sediment concentrations of the Middle and Lower Yangtze River, China**

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**Abstract** Suspended sediment concentration (SSC) is a critical parameter in the study of river sediment transport and water quality variations. The potential for estimating SSC in large rivers using satellite images has been examined in previous studies. Using the Middle and Lower Yangtze River as an example, this paper applies a simple segmented linear regression to eliminate the errors of SSC estimation caused by the nonlinear relation between spectral reflectance and the SSC of turbid rivers. In comparison to previous studies, this one improves the accuracy of estimated SSC values based on the high temporal resolution Terra Moderate Resolution Imaging Spectroradiometer (MODIS) images. The improvement was particularly significant for water samples with high SSC values. This is crucial for studying the spatial and temporal variations of SSC in large rivers that can result from climate change and human activities such as dam construction and illegal sand extractions.

**Key words** satellite remote sensing; suspended sediment concentration (SSC); Terra MODIS images; turbid water; Yangtze River