Tuesday, October 9
Poster Session 2
10:30–12:30

Poster 62

REMOTE SENSING OF UV REFLECTANCE TO FACILITATE THE ASSESSMENT OF WATER QUALITY IN AN URBAN COASTAL OCEAN

The Plankton, Aerosol, Cloud and ocean Ecosystem (PACE) mission will carry the Ocean Color Instrument (OCI), a hyperspectral sensor that can facilitate the measurement of water remote-sensing reflectance in the UV-A range (up to 350 nm). This unprecedented capability by a space-borne ocean-color sensor has the potential to enhance our ability to distinguish dissolved organic matter from chlorophyll in the surface ocean and to improve quantitative assessments of ocean carbon dynamics and coastal water quality. In this study, we specifically evaluate the benefit of using hyperspectral and UV remote-sensing reflectance for the assessment of water quality in an urban coastal ocean. During the Fall of 2015, maintenance on the 5-mile outfall pipe of the Hyperion Water Reclamation Plant (Los Angeles Metropolitan Area) prompted the release of treated wastewater in the shallow nearshore waters of Santa Monica Bay for a period of six weeks, where it affected water quality and prompted the closure of nearby beaches. In situ measurements of water-quality indicators, inherent optical properties, and remote-sensing reflectance in the 350-800 nm range (HyperPRO) were collected simultaneously before, during and after the diversion as part of a large sampling effort to monitor the effects of the diversion. These data, along with airborne data acquired by the hyperspectral Portable Remote Imaging SpectroMeter (PRISM) during the diversion, were used to assess the degree to which UV reflectances improved the performances of several empirical and semi-analytical algorithms and helped decipher the source and impacts of the effluent.

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