OCEAN OPTICS XXIV

Thursday, October 11
Poster Session 4
10:30–12:00

Poster 160
REMOTE SENSING OF A MASSIVE DINOFLAGELLATE HAB EVENT IN SOUTHERN BRAZIL

Harmful algal blooms (HABs) are deleterious ecological phenomena that can have severe impacts on coastal ecosystems, fisheries resources and public health all over the world, therefore, our ability in detecting and monitoring them should be improved. Different HABs species have distinct spectral characteristics due the specific absorption of their accessory pigments, allowing us to monitor then through remote sensing. On June 2016, a major Dinophysis cf. acuminata bloom hit the southern Brazilian coast causing damage to the local mariculture along its trajectory. During its peak, the bloom reached an area of $201km^2$ along the Paraná coast with abundances of 1,310,000 cells.L^{-1}, leading the authorities to issue the shellfish harvesting ban in Santa Catarina and Paraná states. In order to observe its passage and evolution, we performed weekly sampling cruises in estuarine and inner shelf of Paraná. Remote sensing reflectance (Rrs) data were performed with FieldSpec ASD, along with environmental parameters (water temperature, salinity, Secchi depths, chlorophyll and particulate matter concentration). Images from MODISA, VIIRS and Landsat8 were processed with SeaDas software to quantify the magnitude of the HAB. The event was associated with low salinity and marked stratification. The Rrs values of satellite and in situ data where compared and a good relationship between Landsat8 and Rrs just above water where found (correlation of 0.71 at Rrs481nm band). The Rrs spectral shape present patterns related to the abundance of the dominant phytoplankton, where, the highest values in abundance of Dinophysis are related with flatted Rrs, due to the package effect.

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