

A semi-analytical ocean color model and inversion algorithm for PACE

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Overall Objective

Provide validated inversion algorithms for PACE based on the natively hyperspectral semi-analytical ZTT (Zaneveld-Twardowski-Tonizzo) model with in-water BRDF

- Twardowski, M., and A. Tonizzo. 2018. Ocean color analytical model explicitly dependent on the volume scattering function. *Applied Sciences*, special issue on Ocean Optics, 8, 2684; doi:10.3390/app8122684.
- Minimum expected products for PACE:
 - Water BRDF algorithm
 - Phytoplankton absorption spectra
 - Dissolved and detrital absorption spectra
 - Backscattering spectra
 - Backscattering ratio
 - Chlorophyll

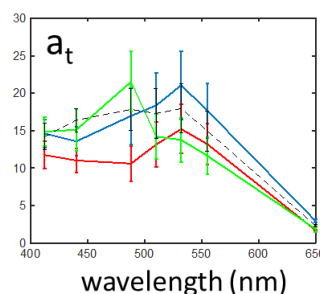
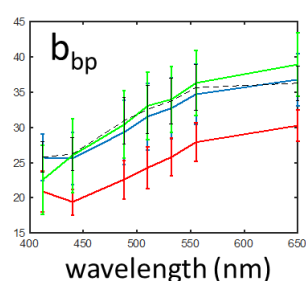
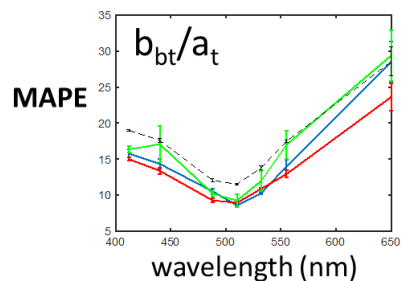


Specific Objectives

- Develop BRDF correction algorithm from ZTT
- Additional validation assessments of the ZTT model, including comparisons with full hemispherical upwelling Lu
- Develop ZTT inversion approaches to solve for spectral absorption and backscattering and subcomponents
- Pursue polarized version of ZTT model
- Transition algorithms for PACE

ZTT inversion testing

SABOR 2015



ZTT BRDF testing

a_{ph} model
 — B95
 — GSM
 — C02
 - - - GIOP

