

Next generation algorithms based on PACE capabilities to obtain inherent optical properties of seawater associated with phytoplankton, nonalgal particles, and colored dissolved organic matter



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3-step Semi-Analytical Algorithm for PACE OCI

- ❑ Motivation: A need for an inverse algorithm that minimizes common limitations associated with assumptions about spectral shapes of IOP data products
- ❑ The 3SAA approach builds upon our previous work
- ❑ Input: $R_{rs}(\lambda)$; ancillary input $a_w(\lambda)$, $b_{bw}(\lambda)$
- ❑ Output: $\langle K_d(\lambda) \rangle$ and nine IOP coefficients: $a(\lambda)$, $a_{nw}(\lambda)$, $a_{ph}(\lambda)$, $a_{dg}(\lambda)$, $a_g(\lambda)$, $a_d(\lambda)$, $a_p(\lambda)$, $b_b(\lambda)$, $b_{bp}(\lambda)$
- ❑ Multi-step approach allows the optimization of each component model for estimating specific products
- ❑ The component models of 3SAA have only weakly restrictive or no assumptions about spectral shapes of output IOPs
- ❑ Characterization of uncertainties: Each component model separately and the propagation through the entire sequence of 3SAA algorithm

