Wednesday, October 10
Poster Session 3
16:00–18:00

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Poster 99
BEHIND THE MASKS OF COASTAL OCEAN COLOR

During standard processing of level 3 NASA Ocean Color data, suspect data is removed prior to spatial and temporal binning in order to provide high-quality composites. Default level 3 data masks may be triggered for example when satellite or sun remote sensing geometries are poor (i.e. high sunglint or high sensor view zenith angle), or when atmospheric correction errors are likely (i.e. derivation of negative water-leaving radiances). Besides accurately identifying when satellite data is likely to generate erroneous geophysical estimates, an ideal pixel mask should remove low-quality retrievals in a manner independent of the sought after underlying environmental conditions, so as to not impose selection bias on the distribution of the remaining data. For remote sensing of the coastal ocean, satisfying the latter criteria is challenging due to biological modification of remote sensing signals, such as the generation of non-zero NIR reflectances by dense algal concentrations (Siegel et al. 2000). Here we evaluate the phenology of default level 3 flags in coastal waters and find that climatological patterns in flag assignments track seasonal cycles in underlying phytoplankton biomass. Using normalized fluorescence line height as a biomass proxy in Monterey Bay, CA, we find that high biomass pixels are twice as likely to trigger default processing masks as low biomass pixels (60.6% of pixels above upper quartile, 30.8% of pixels below lower quartile). We investigate the propagation of masking effects to Level 3 products and ask: Does biology-dependent quality control alter our perspective of what is occurring in the coastal ocean?

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