Toward a coastal BGC capability

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Mesoscale eddies need resolved to get correct scalar mixing (Wolfram et al, 2015)
Origins of surface nutrients (e.g., for macroalgae) complex and eddy-dependent
Upwelling and river sources of nutrients key to understanding coastal BGC
No sediment transport
Coastal BGC remote sensing

Landsat image
Río de la Plata Estuary

False color sediment / colored organic matter

Landsat 8 OLI
Chesapeake Bay
Sediment transport fluxes

Heavy precipitation and drought

MOSART
- Water management
- Urban hydrology

Two-way couplings

Fresh-salt water flow balance

MPAS-Ocean
- Tides
- Salinity
- Waves

ELM
- Coastal vegetation
  - Variable drag on flows
  - Inundation

Sea level rise and storm surge

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