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

Poster 75

SEASONAL AND LATITUDINAL VARIABILITY OF BIOGEOCHEMICAL PROPERTIES ALONG BRITISH COLUMBIA AND SOUTHEAST ALASKA USING SENTINEL-3 OLCI DATA

The coastal ocean of British Columbia (BC) and Southeast Alaska (SEA) is defined by complex topography at the interface of the north Pacific and the Pacific Temperate Coastal Rainforest. Massive freshwater discharge, with high terrestrial carbon loads, drive complex ecosystem dynamics, including the food web support for higher trophic levels such as forage fish and salmon. The objective was to investigate latitudinal patterns of remotely-sensed properties from BC to SEA. Chlorophyll-a (Chla), Total Suspended Matter (TSM), and absorption by Coloured Dissolved Organic Matter (aCDOM) were obtained from Sentinel-3 OLCI sensor from April 2016 to April 2018, through distinct algorithms (C2RCC and POLYMER), and latitudinal transects extracted. Values fell within expected ranges, supporting the suitability of the algorithms. TSM presented similar latitudinal variability during spring and summer, defining important regions: Fraser River plume (4-100mg/L), northern Vancouver Island (NVI; 0.5-10mg/L) and adjacent waters to Skeena and Nass rivers (2-7mg/L). In the fall, Discovery Passage also showed consistent high TSM (up to 100mg/L). Chla had similar variability as TSM during spring and fall (reaching 20mg.m^{-3} in spring), while the vicinity of Banks Island was important during summer. Consistent patterns were not detected in aCDOM, although peaks (up to 0.8m^{-1}) were detected at the Discovery Passage, NVI and adjacent to the Fraser, Skeena and Nass rivers, suggesting smaller scale processes, potentially related to rainfall-based discharges. In future, satellite and in situ oceanographic data will be coupled with hydrological dynamics of the watersheds to define the bio-optical and biogeochemical provinces along the salmon migration route.

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