Tuesday, October 9
Poster Session 2
10:30–12:30

Poster 197

DIATOM ASSEMBLAGES IDENTIFICATION FROM REMOTE SENSING USING PHYSAT

PHYSAT currently allows for the qualitative detection of five main phytoplankton groups from ocean-color measurements. Even though PHYSAT products are widely used in various applications and projects, the approach is limited by the fact it identifies only dominant phytoplankton groups. This current limitation is due to the use of biomarker pigment ratios for establishing empirical relationships between in-situ information and specific ocean-color radiance anomalies in open ocean waters. However, theoretical explanations of PHYSAT suggests that it could be possible to detect more than dominance cases but move more toward phytoplanktonic assemblage detection. Thus, to evaluate the potential of PHYSAT for the detection of phytoplankton assemblages, we took advantage of the Continuous Plankton Recorder (CPR) survey, collected in both the English Channel and the North Sea. The available CPR dataset contains information on diatom abundance in two large areas of the North Sea for the period 1998-2010. Using this unique dataset, recurrent diatom assemblages were retrieved based on classification of CPR samples. Six diatom assemblages were identified in-situ, each having indicators taxa or species. Once this first step was completed, the in-situ analysis was used to empirically associate the diatom assemblages with specific PHYSAT spectral anomalies. This step was facilitated by the use of previous classifications of regional radiance anomalies in terms of shape and amplitude, coupled with phenological tools. Through a matchup exercise, three CPR assemblages were associated with specific radiance anomalies. The maps of detection of these specific radiances anomalies are in close agreement with current in-situ ecological knowledge.

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