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

Poster 6

PHYTOPLANKTON GROUPS AND ASSEMBLAGES IDENTIFICATION FROM REMOTE SENSING USING PHYSAT

Study of phytoplankton biodiversity is currently important because different functional groups have specifics impacts on ocean biogeochemical cycles. These phytoplankton groups should be observed separately beyond the estimation of chlorophyll-a concentration. Among the various efforts made in the past years, the development of ocean colour algorithms now allows for large spatial and time scale observation of phytoplankton functional groups. Among recently developed methods, PHYSAT enables the detection of different phytoplankton groups from space (Alvain et al., 2008). The method is based on an empirical approach that looks for relationships between specific radiance anomalies in the visible spectra and the presence of specific phytoplankton groups. Initially, PHYSAT identified five phytoplankton groups when they are dominant in waters : diatoms, nanoeukaryotes, Synechococcus-like, Prochlorococcus spp. and Phaeocystis-like. Based on the theoretical study of radiance anomalies, identifying only phytoplankton dominance cases may represent an under-utilization of the information carried by the radiance anomalies (Alvain et al., 2012). In this study, we refined the in-situ analysis in comparison with the initial one (Alvain et al., 2008). This new analysis allows for definition of mixed populations of phytoplankton groups, together with the previous dominant phytoplankton groups. On the other side, the radiance anomalies are classified from a recent process (Rêve-Lamarche et al., 2017). In this study, we found new relationships between radiance anomalies and three new mixed assemblages of phytoplankton: non dominant Prochlorococcus, mixed diatoms and nanoeukaryotes, and mixed Synechococcus-like and Prochlorococcus. Maps of identified dominant groups and assemblages are presented and discussed.

Severine Alvain, LOG - CNRS, severine.alvain@cnrs.fr, https://orcid.org/0000-0001-6316-6284
Anne-Hélène REVE-LAMARCHE, LOG-CNRS, annehelene.reve@gmail.com
David Dessailly, LOG-ULCO, david.dessailly@log.cnrs.fr
Grégory Beaugrand, LOG-CNRS, gregory.beaugrand@univ-lille.fr