OCEAN OPTICS XXIV

Valamar Lacroma Dubrovnik Hotel | Dubrovnik, Croatia | October 7–12, 2018

https://oceanopticsconference.org

Monday, October 8
Poster Session 1
16:00–18:00

» View Extended Abstract

Poster 153

HIGHLY RESOLVED DATA SET ON DIFFERENT PHYTOPLANKTON PIGMENTS AND FUNCTIONAL TYPES RETRIEVED FROM UNDERWAY SPECTROPHOTOMETRY IN THE FRAM STRAIT

Four approaches to estimate phytoplankton pigment concentration from particulate absorption spectra, namely Gaussian decomposition, singular value decomposition, neural network and empirical orthogonal function analysis, are evaluated and intercompared and finally evaluated. The neural network model is found to best estimate 14 phytoplankton pigments concentrations (r ranges from 0.45 to 0.96, log10 based RMSE ranges from 0.005 to 0.248). The estimated pigments concentrations are further exploited based on CHEMTAX analysis to derive phytoplankton functional types (PFTs). By the application of this method to the particulate absorption spectra collected by underway spectrophotometry during three summer cruises in 2015 - 2017 to the Fram Strait (European Arctic Ocean), continuous surface PFTs are estimated along the cruise course.

Yangyang Liu, Alfred-Wegener-Institute, yliu@awi.de
Emmanuel Boss, University of Maine, emmanuel.boss@maine.edu
Alison Chase, University of Maine, alisonpchase@gmail.com
Yanqun Pan, East China Normal University, 85200735@qq.com
Hongyan Xi, Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, hongyan.xi@awi.de
Eva-Maria Nöthig, Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, Eva-Maria.Noethig@awi.de
Astrid Bracher, Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, Astrid.Bracher@awi.de