Thursday, October 11
Poster Session 4
10:30–12:00

Poster 219

PHENOLOGY OF PHYTOPLANKTON BIOMASS IN THE ARABIAN SEA FROM REMOTELY SENSED OCEAN COLOR OBSERVATIONS

The Arabian Sea is one of the most biologically productive regions, and is subjected to seasonality changes, which might alter the phytoplankton productivity. For more accurate prediction of phytoplankton dynamics with respect to climate changes, a better understanding of its phenology is required. The phytoplankton phenology studies are a unique way to identify the periodical changes of phytoplankton biomass in their annual cycles. From the past literatures it is evident that chlorophyll-a concentration is considered as the proxy of phytoplankton biomass abundance. In this study, we have examined the phenology of phytoplankton biomass using 15 years (2003-2017) Level 3 (L3) MODIS-Aqua daily chlorophyll-a concentration data. The aggregated chlorophyll-a concentration data were used to estimate the monthly climatology, interannual variations, chlorophyll-a concentration anomalies and min-max chlorophyll-a concentrations using statistical indices. The Fast Fourier Transform and threshold methods were also used to estimate the phytoplankton peak months and its potential time shift's in the Arabian Sea, which are often influenced by physical and biochemical forcing. The fine-scale resolution analysis of chlorophyll-a concentration phenology is qualitatively realistic, and is strongly coupled with influencing factors such as sea surface temperature, winds, and photosynthetic available radiation (PAR). The results obtained from the above metric gives a better understanding of the phytoplankton biomass dynamics in the Arabian Sea and its reaction towards the consequences of extreme changes over climatic and biochemical cycles.

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