

## Physiobiological study of phytoplankton bloom coupled with branching phenomena of Tsushima current in southern Japan Sea (East Sea)

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The present study is focused on biological processes of inshore and offshore phytoplankton biomass in southern Japan Sea (east sea) associated with Tsushima, the branch of western boundary current (Kuroshio) of north Pacific subtropical gyre. Successive monthly and daily investigations were made for a period of four years (2000-2003), using Moderate Resolution Imaging Spectroradiometer (MODIS) and Sea-viewing Wide Field -of-view Sensor (SeaWiFS) data to understand the relationship between phytoplankton bloom and the current superimposed with seasonal transport. The seasonal variability of Tsushima current is clearly visible in Japan Sea, with increased or decreased propulsion of warm waters that enters via Korean strait that brought alterations in the productivity of sea. High concentrations of Chlorophyll-a (Chl-a) witnessed for two times in each year i.e. during spring (March-May) (mean up to 4.0 mg m<sup>-3</sup>) and autumn (September-November) ) (up to 3.0 mg m<sup>-3</sup>) while, less concentrations prevailed for both winter (December-February) (~1.5 mg m<sup>-3</sup>) and summer (June-August) (mean up to 1.0 mg m<sup>-3</sup>) periods respectively. Small regional/anticyclone eddies owing to pressure irregularities developed by western branch (East Korea Warm Current) of Tsushima noticed enhancing the concentrations of Chl-a at particular locations while, east branch found weak year round. Analysis of ocean current, temperature and wind variables have reveled that large phytoplankton biomass occurred in the front waters between Tsushima current of warm temperature and the Liman current of cold temperatures.