**PHYTOPLANKTON PHENOLOGY IN TROPICAL ENVIRONMENTS: EXAMPLES ALONG THE SOUTHWESTERN ATLANTIC COAST (BRAZIL)**

Zoffoli, Maria Laura1; Rudorff, Natália de Moraes1; Freitas, Lucas Barbedo1; Kampel, Milton1; Frouin, Robert2

Phytoplankton constitute the base of the trophic web in marine environments and their abundance is coupled to all upper trophic levels. Seasonal variability has been well described in temperate and polar latitudes, but information about bloom occurrence and timing are relatively scarce in tropical latitudes. MODIS-Aqua chlorophyll-*a* (Chl) climatology (2002-2011) is obtained for three continental shelf/slope regions along the Brazilian coast: MARSEAL (32-37.5˚W, 8.5-13.5˚S), AMBES (36-42˚W, 18-22˚S) and CAMPOS (39-42˚W, 22-24˚S) basins. The annual bloom is modeled by adjusting to a Gaussian function and start is considered as 5% above the annual median. Sea surface temperature (SST), winds, mixed layer depth (MLD) and euphotic zone depth (ZEU) are analyzed for the same regions. In the three regions, the annual blooms started in the austral summer-autumn and Chl peaks occurred during winter, even when SST is lower in winter and beginning of spring. In low latitudes light is not a limiting factor to promote phytoplanktonic growth, instead nutrients availability is poor in the euphotic zone. Increase in MLD caused by higher wind intensity and lower vertical instability of the water column are responsible for nutrient input in the euphotic zone. Over the shelf, rainfall regime, terrestrial transport by rivers, and material re-suspension caused by cold front passages also influence the winter blooms. From North to South, over the shelf blooms last longer and are lower in magnitude. Over the slope, instead, duration are similar and peaks more intense.

1National Institute for Space Research - INPE - Av. dos Astronautas, 1758 - 12227-010 - São José dos Campos - SP, Brazil - lzoffoli, nmr, lucasbf, milton}@dsr.inpe.br

2Scripps Institution of Oceanography - UCSD – 8810 Shellback Way - La Jolla - CA, USA - rfrouin@ucsd.edu