



Spatial and temporal variability of chlorophyll in Bay of Bengal.

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The Bay of Bengal (BoB) receives approximately 628 km³/ year of freshwater discharge from the Ganges and Brahmaputra rivers. Freshwater discharge from rivers increases the nutrient load and thereby enhances phytoplankton production in the BoB. Cholera, an infectious water-borne disease caused by bacterium *Vibrio cholerae*, remains endemic in the BoB region. Phytoplankton provides favorable environment for survival of cholera bacteria. Therefore, for development of any predictive model for cholera, it is important to quantify the spatial and temporal variability of phytoplankton in the BoB. Satellite remote sensing is the most effective way to quantify this variability over a range of space and time scales. Using ten years (1998–2007) of daily, weekly and monthly SeaWiFs chlorophyll, a surrogate variable for measuring phytoplankton, imagery we explore the spatial pattern and dominant temporal variability of chlorophyll over the BoB region. We find that chlorophyll in the coastal waters has more variability, both in temporal and spatial scales, than the offshore waters. Mechanism of production and space-time variability of coastal chlorophyll is different from those of offshore chlorophyll. While coastal chlorophyll is dominated by influx of terrestrial nutrients through river discharge, chlorophyll in the offshore region is primarily controlled by oceanic processes. We will also explore issues related to dominant space and time scales of chlorophyll variations in the entire bay.