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Title: (OA2) Satellite evidence of the movement of a harmful algal bloom (HAB) and the related oceanographic features in the Bohai Sea, China

Abstract: Harmful Algal Blooms (HABs) are truly global marine phenomena of increasing significance. Many HAB occurrences may have been not recorded because of their high spatial and temporal variability and of their advection, once formed, by surface currents. A serious HAB occurred in the Bohai Sea in autumn 1998, dominated by the species Ceratium furca sp, causing the largest fisheries economic loss recorded in that region. The present study traced the formation and advection of that HAB in September 1998 in the northern Bohai Sea by satellite SeaWiFS ocean color data and correlated the spatial and temporal changes with oceanographic data. The results show that the bloom originated in the coastal water in the west of the Bohai Sea in early September when sea surface temperature increased to 25-26 oC. The bloom biomass was shifted southeastward and intensified around the center portion of the sea in the mid September. The bloom covered an area of 60 x 65 km2 with high Chl-a concentration (6.5 mg m-3) in the bloom center. At the end of September, the bloom decayed in the eastern Bohai Sea when water temperature decreased to 22-23 oC. Northeasterly winds were recorded in August and September, and northwesterly winds in late September, October and November. The HAB may have been initiated by a combination of the nutrients from river discharges in the coastal waters of the west of the Bohai Sea and the increase of water temperature; it may have been then advected eastward by the northern Bohai Sea circulation enhanced by northwesterly winds in late September-early October.

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