

## Effect of monsoonal runoff on the glacial-interglacial productivity changes in the western Bay of Bengal

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Rainfall over the Indian subcontinent is primarily controlled by the Indian monsoon, with the summer monsoon accounting for 80% of the precipitation. The majority of this continental precipitation is drained to the Bay of Bengal through multiple rivers. This results in an annual freshwater influx of  $1.5 \times 10^{12}$  m<sup>3</sup>/y. The Bay of Bengal receives 1.74, 0.08 and 0.91 Tg of river-borne nitrate, phosphate and silicate through the monsoonal outflow. This nutrient outflow from the Indian subcontinent supports a primary production of  $\sim 11.5$  TgC, acting as a major exporter of carbon from the surface to the deep. However, to what extent the variation in amplitude and periodicity of the Indian monsoon impacts the quantum of nutrient supply to the Bay of Bengal on a millennial scale remains enigmatic. The reconstruction of past changes in the terrestrial runoff to the Bay of Bengal and resulting productivity changes will give insight into the control of the Indian monsoon on the nutrient export and ocean primary productivity. We will present the records of surface ocean runoff constructed through productivity proxies of the last 130 kyr (MIS 5e- present) at a resolution of  $\sim 1.5$  kyr constructed utilizing Ba/Ca and Cd/Ca of the mixed layer dwelling planktic foraminifera *Globigerinoides ruber* and planktic foraminiferal assemblage data. The sediment samples collected from Site U1446 during the IODP expedition 353 will be used. Trace element ratio determination is being done using a QQQ-ICPMS. We will measure the Mg/Ca to get the sea surface temperature (SST). The instrumental precisions for the measurements of Mg/Ca, Ba/Ca, and Cd/Ca are 1-2 %, <2 % and <5 %, respectively. The SST, along with the already available published oxygen isotope data of the same species from the same samples, will be utilized to reconstruct the sea surface salinity. The salinity and runoff record will be compared with the productivity record of the last 130 kyr to know the control of the monsoonal runoff on the productivity changes during glacial-interglacial intervals.