

## River-ocean interaction at the Ganges-Brahmaputra river mouth

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The Ganges-Brahmaputra river discharges a significant amount of freshwater to the Bay of Bengal through the Ganges-Brahmaputra river delta. This freshwater discharge occurs with a prominent seasonal cycle, a minimum from late winter to early spring and a maximum from late summer to early fall. The oceanic circulation within the Bay of Bengal also changes seasonally, through the Monsoonal winds and the Kelvin waves that propagate from the equatorial Indian Ocean. River-ocean interaction has primarily progressed based on a single channel and so the impact of multiple-channels, such as that through a delta, is still an open question. To examine how the interaction between the river flow and the oceanic circulation may occur near the river mouth, numerical experiments were carried out with a spatial resolution high enough to resolve the narrow channels of the river delta. The model shows a classical river plume that flows along the coast, which propagates southwestward when the oceanic currents are quiescent. Preliminary results also suggest that some of the flow in narrow channels may reverse due to river-ocean interaction and that the oceanic circulation can, at times, reverse the direction of the river plume.

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