of the sediments, characteristics of the SSC, also could help in understanding the origin of the plumes even during the nonmonsoon season, when the presence of strong coastal and geostrophic currents and direction of the plume cause the formation of these plumes even minimal during the nonmonsoon season (February–May); however, when the wind direction changes with the approach of the monsoon, the plume then disperses offshore toward the coast due to the coastal topography near the study area.

From this preliminary analysis, we conclude that the unique plumes observed in the Bay of Bengal are due primarily to the presence of water jets flowing away from the Kakinada coast. The morphology of the jet control the presence, extent, intensity, and direction of the plume. Because of the lack of sufficient observations, we could not analyze the chemical composition and particulate matter concentrations to understand how these plumes evolve as they propagate. This information could help to establish the conditions that are likely to change due to changes in agricultural practices, an increase in human population, and climate change. The studies on the composition and origin of the plumes require the collection of in situ observations on the chemical composition of seawater in the study area through detailed experimental planning that could also help in understanding the origin of the sediments, characteristics of the SSC, and features of the plume.

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Author Information

Parthasarathy, S. and Mehta, M. National Remote Sensing Agency, ISRO, Satellite, Hyderabad, India. Email: isrsat@gmail.com; Praveen Kumar, National Institute of Oceanography, Dona Paula, Goa, India; Subhash Chandra Roy, National Remote Sensing Agency, Balanagar, Hyderabad, India; E-mail: mmali73@yahoo.com.

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Modern marine heat flow studies commonly include coincident seafloor and subsurface mapping and imaging surveys and sediment coring programs that provide material for physical, chemical, and microbiological analyses. Navigational technologies that precisely locate marine heat flow probes on the seafloor, and new perspectives on survey design and nesting of widely and closely spaced heat flow measurements, have improved the quality, interpretability, and utility of the data for many scientific problems. These approaches have turned intermeasurement variability that was once considered to be experimental noise into signals that respond to shallow seafloor processes related to fluid flow, gas hydrates, sedimentary processes, and oceanographic phenomena.

Although the scientific need for continued acquisition of seafloor heat flow data cuts across disciplines and programs, the future of U.S. capabilities remains uncertain. The U.S. community needs to move quickly to establish basic capabilities in the acquisition, processing, and interpretation of marine heat flow data, before critical expertise is lost. The workshop considered several relatively low-cost (e.g., pay-as-you-go) models to provide the U.S. community with access to modern marine heat flow capabilities during surveys on USOOS (University National Oceanographic Laboratory System) and other research vessels.

The full workshop report is available at http://www.coas.oregonstate.edu/Workshops/FutureofMarineHeatFlow.html. We thank the National Science Foundation (OCE06-48146) for financial support.

Robert N. Harris, College of Oceanic and Atmospheric Sciences, Oregon State University; Corinne; Email: thams@coas.oregonstate.edu; Andrew Field, Earth and Planetary Sciences, University of California, Berkeley; Carson Hays, U.S. Geological Survey, Woods Hole Marine Science Center; and Fernando Martinez, Institute of Geophysics and Planetary Laboratory, University of Hawai`i at Manoa, Honolulu.

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