

## **TRANSPORT AND FLUX OF SUSPENDED SEDIMENT IN A PARTIALLY-MIXED ESTUARY, WINYAH BAY, SC**

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A multidisciplinary approach in understanding the dynamics of flow-particles-contaminants in estuarine environments was executed in an impacted estuary in South Carolina. As a part of this research project, intensive field measurements were conducted along the upper region of Winyah Bay estuary during October 2001. We carried out concurrent measurements of water mass properties (i.e., salinity, temperature), currents (using ADCP), sediment resuspension (using OBS), and particle size distribution of the sediment in suspension (using Laser Scatterometry, LISST) with the water sampling for chemical analyses. Residual circulation along the main channel axis shows inland direction near the bottom and outward direction at the surface in the freshwater-saltwater interface (IFS). The magnitude of inland directed flow is much higher than seaward flow. Resuspension events in the IFS exhibit a tidal asymmetry with higher concentrations during the flood (up to 0.94 g/l). Fluxes of suspended sediments in the upper estuary are directed inland during low discharge condition.