

## POSTER ABSTRACT

### **Real Time Monitoring of Processes in Permeable Sediments by Underwater Mass Spectrometry**

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As part of a larger collaborative project to study benthic boundary layer processes, part of our work has recently focused on understanding processes in permeable sediments on the continental shelf off the coast of Georgia by measuring biogenic gas production with an in situ mass spectrometer. The overall project, headed by the Skidaway Institute of Oceanography, is an instrumentation observatory designed to span a wide range of spatial and temporal scales in order to achieve an understanding of benthic exchange processes in a permeable sand environment. The underwater membrane inlet mass spectrometer will be deployed during seasonal instrument deployment and recovery cruises to measure real time dissolved gas concentrations (O<sub>2</sub>, CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub> and Ar) in the porewaters at various depths in the sediment.

During a recent cruise on the R/V Savannah an underwater mass spectrometer was deployed on the seafloor for 43 hours. It was connected by a 200m tether to the Naval R2 tower in the South Atlantic Bight at a depth of approximately 30 m and communication was established via Ethernet radio between the tower and the ship. Sampling occurred from within a benthic chamber which will be described. Data from this cruise will be discussed, as well as future plans for sample interfaces to further probe the sediment.