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DEPARTMENT OF OCEAN, EARTH, AND ATMOSPHERIC SCIENCES
3PM – ROOM 200 IN THE OCEANOGRAPHY/PHYSICS BUILDING
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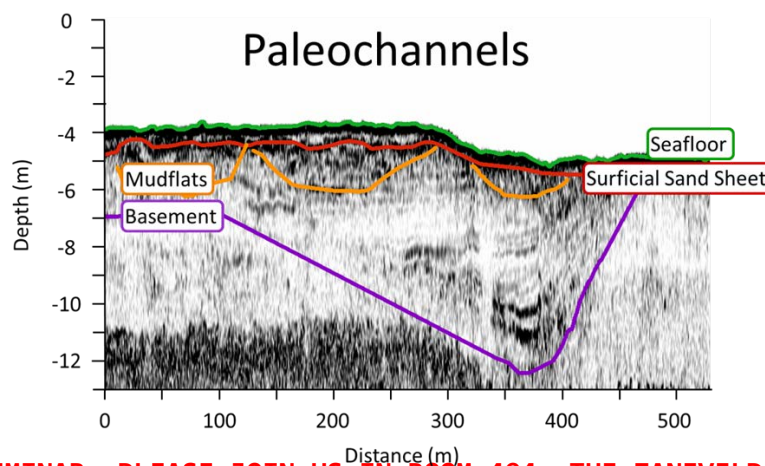
“Sediments and hydrogeology across the continental shelf offshore Charleston, South Carolina.”

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ABSTRACT

Offshore of Charleston, South Carolina, an extensive CHIRP survey covering about 220 km² up to 14 km offshore, with 13 co-located sediment cores, is one of the few to combine seismic and sediment cores at paleochannel sites on the U.S. southeast margin to interpret the paleo-environment during sea-level transgression. This project was designed to test the hypothesis that diffuse discharge of saline groundwater is widespread on continental shelves and that it provides significant flux into the coastal ocean. It reveals a set of paleochannels was incised into the continental shelf during a sea-level lowstand, with subsequent paleochannel and mudflat depositional fill. Paleochannels have a >0.5m thick layer of mud at their base that generally coarsens upward in a transgressive sequence. Thirteen cores from 0.5 to 6.5 m are visually described and five are selected for analysis of grain size using a laser diffraction particle size analyzer, porosity using water displacement, and permeability with a permeameter. Our results suggest that paleochannels are important sites of organic sediment deposits during transgressions, and may hinder submarine groundwater discharge.



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