Abstract Submitted
for the TSS21 Meeting of
The American Physical Society

In Situ Oceanographic and Atmospheric Observations of Hurricane Hanna in the Northwestern Gulf of Mexico[1] GIANNA MILTON, University of Dallas, STEVEN DIMARCO, Texas A&M University — Through momentum flux caused by air-sea interaction, hurricanes drive mixing processes of the upper ocean and significantly impact the physical transport of surface water mass and volume, and influence the distribution and transformation of biogeochemical material. Since 1995, the Texas Automated Buoy System (TABS) (funded by the Texas General Land Office) has provided hourly observations of oceanographic and atmospheric variables along the Texas coast for the purposes of oil spill response and mitigation. Hurricane Hanna made landfall on the lower Texas coast on July 25th, 2020. We present analyses of TABS buoy data to describe the oceanic response to the wind driving. Specific attention is on ADCP current velocity profiles from Buoy X located east of South Padre Island. The data suggest that current velocity increased above background levels in the hours before the storms closest approach to the buoy, to a maximum of 95.09 cm/s. Spectral analyses reveal the dominant periodicities of the current velocity oscillations are consistent with inertial wind-driving processes.

[1]Funding for the Texas Automated Buoy System is provided by the Texas General Land Office through a contract with Texas AM University (SFD); project coordination was through the National Science Foundation - Research Experiences for Undergraduates (REU) program at Texas AM University (Observing the Ocean); additional funds were provided by the Department of Oceanography at TAMU (SFD)

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Date submitted: 14 Mar 2021 Electronic form version 1.4