

Abstract Submitted  
for the MAR16 Meeting of  
The American Physical Society

**Tracking Coherent Structures and Source Localization in Geophysical Flows**<sup>1</sup> ERIC FORGOSTON, Montclair State University, ANI HSIEH, Drexel University, IRA SCHWARTZ, US Naval Research Laboratory, PHILIP YECKO, Cooper Union — There has been a steady increase in the deployment of autonomous underwater and surface vehicles for applications such as ocean monitoring, tracking of marine processes, and forecasting contaminant transport. The underwater environment poses unique challenges since robots must operate in a communication and localization-limited environment where their dynamics are tightly coupled with the environmental dynamics. This work presents current efforts in understanding the impact of geophysical fluid dynamics on underwater vehicle control and autonomy. The focus of the talk is on the use of collaborative vehicles to track Lagrangian coherent structures and to localize contaminant spills.

<sup>1</sup>Research supported by the National Science Foundation and the Office of Naval Research.

Eric Forgoston  
Montclair State University

Date submitted: 04 Nov 2015

Electronic form version 1.4