

1098-49-165

R O Moore* (rmoore@njit.edu), New Jersey Institute of Technology, Newark, NJ 07102, and **D McDougall** (damon@ices.utexas.edu), ICES, 201 E. 24th St., Stop C0200, The University of Texas at, Austin, TX 78712-1229. *Optimal control in Lagrangian data assimilation*. Preliminary report.

Inferring the state of an ocean flow is an integral part of environmental monitoring, whether it be for improved preparedness for extreme weather events; better understanding of marine animal migrations; or as part of a general climate model for the planet. Autonomous vehicles with a limited capacity for locomotion are increasingly being used for data assimilation of various quantities of interest in the ocean, including the underlying time-independent velocity field. We assess the efficacy of optimal control techniques to guide Lagrangian data assimilation in 1- and 2-dimensional flows, focusing on assimilation of the velocity field itself. (Received January 24, 2014)