

Abstract Submitted
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Collaborative tracking and control in time-dependent stochastic dynamical systems¹ ERIC FORGOSTON, Montclair State University, ANI HSIEH, Drexel University, IRA SCHWARTZ, U.S. Naval Research Laboratory, PHILIP YECKO, Montclair State University — We consider the problem of stochastic prediction and control in a time-dependent stochastic environment, such as the ocean, where escape from an almost invariant region occurs due to random fluctuations. Lagrangian Coherent Structures (LCS) are found using collaborative tracking, and a control policy is formulated that utilizes knowledge of the LCS. The control strategy enables mobile sensors to autonomously maintain a desired distribution in the environment, and is evaluated with experimental data.

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