

# PHYSICS COLLOQUIUM

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3:50 PM, Room 111, Life Sciences

*“Revealing the Mechanics of Fluid Transport”*

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The motion of fluid has an intriguingly complex behavior. If dye is placed in the fluid, we may reveal fascinating stretching and folding of fluid blobs. If particles are suspended in the flow, their motion may appear coherent or chaotic. This has led us to wonder, are there underlying mechanisms, or structures, that organizes the seemingly complex patterns of fluid motion we encounter in nature? In many cases, yes. These structures are akin to invariant manifolds commonly studied in dynamical systems theory. Locating these so-called Lagrangian coherent structures (LCS) can, in fact, be relatively straightforward. Furthermore, LCS often provide a wealth of information that is hidden from our traditional perspectives. In this talk we will discuss how LCS are computed and how they are being used to solve practical problems.