Physical Mathematics Seminar

An Objective Definition of a Vortex

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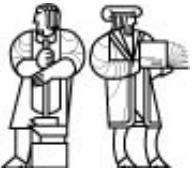**Massachusetts Institute of Technology**

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Building 2, Room 338

Abstract

The most widely used definitions of a vortex are not objective: they identify different structures as vortices in frames that rotate relative to each other. Yet a frame-independent vortex definition is essential for rotating flows and for flows with interacting vortices. In this talk, I give an objective description of vortices using dynamical systems methods. I show on examples how the resulting vortex criterion outperforms earlier frame-dependent criteria.