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A measurable perspective on finite time coherence

The concept of coherent structures in a flow refers to notions of subsets of the flow which preserve some measurable quantity, despite the generally nonlinear flow: something simple embedded in the complexity. Our own perspective of shape coherent sets is defined in terms of flow that is locally as rigid body motions, and uncovered by investigating boundary curvature evolution. Key for unifying to other concepts of coherence is choice of measure interpreted across domains.