





Barcelona Analysis Seminar2021–2022URL. https://mat.uab.cat/web/seminarianalisi/Date. July 18, 2022Time. 15:00 CETRoom. CRM A1 (Universitat Autònoma de Barcelona)Online streaming (Zoom). Click here to join.

Chaos in the Euler equation of hydrodynamics on manifolds of high dimension

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Consider a finite dimensional family of smooth divergence-free vector fields, parametrized by some manifold N, and with the property that the solutions of the Euler equation with initial condition in the family remain there for all time, defining an ODE on N. I will review recent results on the existence of this type of invariant manifolds of fluid velocities, and on their dynamics. In particular, I will show how to construct families of non-steady solutions exhibiting all kinds of qualitative dynamics in the eulerian phase space, like chaos, invariant manifolds of any topology, and strange attractors.