



On the chaotic behavior of the Lagrangian flow of the 2D Navier-Stokes system with bounded degenerate noise

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Abstract: In this talk, we will consider a fluid governed by the randomly forced 2D Navier – Stokes system. We will assume that the force is bounded, acts directly only on a few Fourier modes, and satisfies some natural decomposability and observability properties. Under these assumptions, we will show that the Lagrangian flow associated with the random fluid exhibits chaotic behavior characterized by the strict positivity of the top Lyapunov exponent. To achieve this, we will introduce a new abstract result that allows to derive positivity of the top Lyapunov exponent from the controllability properties of the underlying deterministic system. This talk is based on a joint work with Deng Zhang and Chenwan Zhou from SJTU.

讲座时间:

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主办单位:

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