

Title:

A new take on ergodicity of the stochastic 2D Navier-Stokes equations

Abstract:

We establish general conditions for stochastic evolution equations with locally monotone drift and degenerate additive Lévy noise in variational formulation resulting in the existence of a unique invariant probability measure for the associated ergodic Markovian Feller semigroup. We prove improved moment estimates for the solutions and the e -property of the semigroup. Examples include the stochastic incompressible 2D Navier-Stokes equations, shear thickening stochastic power-law fluid equations, the stochastic heat equation, as well as, stochastic semilinear equations such as the 1D stochastic Burgers equation.

Joint work with Gerardo Barrera (IST Lisboa), <https://arxiv.org/abs/2412.01381>