

Analysis and Applied Mathematics Seminar

On unique ergodicity and mixing for the damped-driven stochastic KdV equation

Vincent Martinez (CUNY)

Abstract: We discuss the existence, uniqueness, and regularity of invariant measures for the damped-driven stochastic Korteweg-de Vries equation, where the noise is additive and sufficiently non-degenerate. It is shown that a simple, but versatile control strategy, typically employed to establish exponential mixing for strongly dissipative systems such as the 2D Navier-Stokes equations, can nevertheless be applied in this weakly dissipative setting to establish both unique ergodicity, albeit without mixing rates, as well as regularity of the support of the invariant measure. Under the assumption of large damping, however, exponential mixing can be recovered.

Monday, March 15 at 4:00 PM in Zoom