1142-35-43 **Vincent R Martinez*** (vrmartinez@hunter.cuny.edu), CUNY-Hunter College, Department of Mathematics and Statistics, 695 Park Ave, New York, NY 10065. *Unique ergodicity for the damped-driven stochastic KdV equation.* Preliminary report.

In their 1967 seminal paper, Foias and Prodi defined a notion of finitely many degrees of freedom in the context of the two-dimensional incompressible Navier-Stokes equations (NSE). In particular, they proved that if a sufficiently large spectral projection of the difference of two solutions converge to zero asymptotically in time, then the corresponding complementary projection of their difference must also converge to 0 in the infinite-time limit. In other words, the high modes are eventually enslaved by the low modes. One may thus define the number of degrees of freedom of the flow to be the smallest number of modes needed to guarantee this convergence. This property has since led to several developments in the understanding of the long-time behavior of solutions to the NSE, for instance, in the context of turbulence, but also to data assimilation, and the existence of determining forms. In this talk, we will discuss this asymptotic enslavement property as it regards the issue of uniqueness of invariant measures the damped-driven stochastic KdV equation, of which the undamped, deterministic analog is a classical model for shallow water waves. This is joint work with Nathan Glatt-Holtz (Tulane University) and Geordie Richards (Utah State University). (Received August 20, 2018)