



Karlstad Applied Analysis Seminar (2021)

Hong Duong, University of Birmingham, United Kingdom

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Markovian limit of the generalized McKean-Vlasov dynamics

Abstract

Many systems in nature and in applications can be modeled using systems of interacting particles (or agents) that are possibly subject to thermal noise. Standard examples include plasma physics and galactic dynamics; more recent applications are dynamical density functional theory, mathematical biology and even mathematical models in the social sciences.

In this talk, we derive the underdamped McKean-Vlasov dynamics from the white noise (Markovian) limit of the generalized McKean-Vlasov dynamics both for the particle system and for the mean field PDE. We apply the formal perturbation expansions method.