
AARMS-CMS Student Poster Session
Présentations par affiches des étudiants - AARMS-SMC

WILLIAM DANIEL STEPHENSON, University of Ottawa
Solutions to the parabolic Anderson model on an open domain

The parabolic Anderson model is a stochastic partial differential equation that describes diffusion in a random environment. We consider the model on an open domain $\mathcal{D}$ with Dirichlet boundary conditions, and noise given by an isonormal Gaussian process that is fractional in time. We show that the existence of a mild solution on the full space implies existence to the corresponding equation on $\mathcal{D}$. Our approach relies on approximating the solution by random fields that admit a Feynman–Kac representation.

JINXIN WANG, University of Ottawa
A Functional Central Limit Theorem for the KPZ Equation with Narrow Wedge Initial Data

The Kardar–Parisi–Zhang (KPZ) equation is a fundamental model for surface growth. I will begin by introducing the equation and its connection with the stochastic heat equation via the Cole–Hopf transform. Building on a recent finite-dimensional convergence result, I will then present our proof of tightness, which yields a functional central limit theorem for spatial averages of the KPZ solution with narrow wedge initial data. The proof combines the Clark–Ocone formula, a common-ray change of spatial variables, and a Chapman–Kolmogorov relation to obtain uniform moment bounds for time increments on compact time intervals bounded away from zero. This is joint work with Raluca M. Balan and Le Chen.