

ACMS Applied Math Seminar

AVA MAURO

**Thurs, Jan 22
127 Hayes-Healy
3:30 PM**



Stochastic Reaction-Diffusion Models and Drift

Three commonly used stochastic reaction-diffusion models are the Smoluchowski Diffusion-Limited Reaction (SDLR) model, the Doi model, and the Reaction-Diffusion Master Equation (RDME) model. In this talk, I will give an overview of these three models and the relationships between them. Each of these models can be extended to include drift in addition to reactions and diffusion. I will also discuss a method that I have worked on for simulating the SDLR model with drift. The method combines elements of the First-Passage Kinetic Monte Carlo (FPKMC) method for simulating stochastic reaction-diffusion systems and the Wang-Peskin-Elston lattice discretization of drift-diffusion.

The Department of Applied and Computational
Mathematics and Statistics

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