Texas Tech University - Department of Mathematics and Statistics

Seminar in Applied Mathematics

Stochastic processes associated with dispersion across sharp interfaces

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ABSTRACT. Dispersion in highly heterogeneous environment, as characterized by abrupt changes (discontinuities) in the diffusion coefficient (such discontinuous points are called interfaces), can be studied via the identification of the associated stochastic process. The challenge here is connecting the PDE that governs such dispersion to a stochastic process. In this talk, Ill discuss few dispersion models in hydrology, oceanography and explain the method of identifying the associated stochastic processes. Ill also discuss the effect of interfaces on breakthrough curves (first passage times) and occupation times of the process.