DEPARTMENT OF STATISTICS

Seminar on Stochastic Differential Equations and Applications

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STRONG SOLUTIONS OF STOCHASTIC POROUS MEDIA EQUATIONS: A SURVEY OF RECENT RESULTS

2PM-4PM, Wednesday, February 20th

RC-4082

In the talk we shall give a survey of recent results for strong solutions of stochastic porous media equations, that is, stochastic partial differential equations of type

$$dX(t) = [\Delta\psi(t, X(t)) + \Phi(t, X(t))]dt + B(t, X(t))dW(t).$$

We shall cover the following topics: existence and uniqueness, asymptotic properties, regularity, preservation of positivity of initial conditions and Freidlin- Wentzell large deviations. We shall also compare our results with classical ones in the deterministic case, and include most recent results on applications models describing self-organized criticality.