1071-35-36 **Pao-Liu Chow*** (`plchow@math.wayne.edu`), Department of Mathematics, Wayne State University, 656 W Kirby St., Detroit, MI 48202. *Unbounded Solutions of Some Semilinear Stochastic PDEs.*

The talk is concerned with some recent results on the explosive solutions for a class of nonlinear stochastic parabolic and hyperbolic equations. In the deterministic case, the blow-up of solutions in finite time for nonlinear PDEs has been studied extensively. It is of theoretical and applied interest to examine the effect of random perturbation on the existence of explosive solutions. For the parabolic case, such as stochastic reaction-diffusion equations, we will show that under some sufficient conditions on the initial data, the nonlinear terms and the multiplicative noise, there exist positive solutions that blow up in finite time in the mean L^p-sense for any p greater or equal to one. Two examples are given to show the possibility of blow-up due to the nonlinear term and the noise term respectively. In the case of stochastic wave equations, we obtain some sufficient conditions for the existence of explosive solutions in the mean-L^2 norm. In contrast with the parabolic case, the proof is based on a stochastic energy method. (Received January 23, 2011)