AMI and Math-Bio Seminar

Friday, May 23, 2008
3:00 p.m.
CAB 657

Philippe Laurençot
Université Paul Sabatier, Toulouse

"Critical mass in a generalized Smoluchowski-Poisson system"

Abstract

In space dimension 2, it is well-known that the Smoluchowski-Poisson system (also called the simplified or parabolic-elliptic Keller-Segel chemotaxis model) exhibits the following phenomenon: there is a critical mass above which all solutions blow up in finite time while all solutions are global below that critical mass. We will investigate the case of the critical mass along with the stability of self-similar solutions with lower masses. We next consider a generalization to several space dimensions which involves a nonlinear diffusion and show that a similar phenomenon takes place but with some different features.

Refreshments will be served in CAB 649 at 2:30 p.m.