



**The Hong Kong Polytechnic University  
Department of Applied Mathematics**

**Seminar  
On**

**Prevention of blow up by fast diffusion  
in chemotaxis**

**by**

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University of Connecticut**

**Abstract**

In this paper, we study a strongly coupled parabolic system with cross diffusion term which models chemotaxis. The diffusion coefficient goes to infinity when cell density tends to an allowable maximum value. Such 'fast diffusion' leads to global existence of solutions in bounded domains for any given initial data irrespective of the spatial dimension, which is usually the goal of many modifications to the classical Keller-Segel model. The key estimates that make this possible have been obtained by a technique that uses ideas from Moser's iterations.

**Date : 7 January, 2009 (Wednesday)**  
**Time : 4:00 – 5:00 p.m.**  
**Venue : Departmental Conference Room HJ610  
The Hong Kong Polytechnic University**

**\*\*\* ALL ARE WELCOME \*\*\***