Aggregation models in biology

Titles and Abstracts

The Graduate Center, CUNY
365 Fifth Avenue
New York, NY 10016
Science Center, Room 4102

Thursday, March 22nd, 2012
9:00am till 4:00pm

9:30–10:00:	*Coffee*
10:00–11:00:	José-Antonio Carrillo
11:15–12:15:	Peter Constantin
12:15–1:30:	*Lunch*
1:30–2:30:	Yuan Lou
2:45–3:45:	Juan J.L. Velázquez
3:45–4:15:	*Discussion*

José-Antonio Carrillo, Universitat Autònoma de Barcelona
Blowup in multidimensional aggregation equations

I will present a summary of several results concerning the aggregation equation, the way of defining a solution pass the blow-up time in a unique way for certain potentials and some new properties of the solutions in the case of repulsive-attractive potentials.

Peter Constantin, Princeton University
Nonlocal problems

Yuan Lou, Ohio State University
Dispersal in Heterogeneous Landscapes

From habitat degradation and climate change to spatial spread of invasive species, dispersal plays a central role in determining how organisms cope with changing environments. The dispersal of many organisms depends upon local biotic and abiotic factors, and as such are often biased. In this talk we will discuss some recent progress on the effects of biased dispersal on two competing species in heterogeneous environments via reaction-diffusion-advection models.

Juan Velázquez, Hausdorff Center, Bonn
Measured valued solutions for the Keller-Segel system

In this talk I will describe the construction of meeasured values global solutions of the classical Keller-Segel system. To this end, two different regularizations of the Keller-Segel system, containing a small cutoff parameter, are introduced. The solutions of the resulting systems are globally defined. Taking the limit of the small parameter to zero, the original Keller-Segel is formally recovered and the solutions of the regularized problem converge to some mea-

sures which provide suitable weak solutions of the Keller-Segel system. It will be proved also that the resulting solutions are different for different regions. (These results are joint work with S. Luckhaus and Y. Sugiyama).

Organizers:
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