



Department of Mathematics
The Chinese University of Hong Kong

數學系
香港中文大學

Phone: (852) 3943 7988 • Fax: (852) 2603 5154 • Email: dept@math.cuhk.edu.hk (Math. Dept.)
Room 220, Lady Shaw Building, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong

Colloquium

Swarming models with local alignment effects: phase transitions & hydrodynamics

Professor Jose Antonio Carrillo
Imperial College London

Abstract

We will discuss a collective behavior model in which individuals try to imitate each others' velocity and have a preferred asymptotic speed. It is a variant of the well-known Cucker-Smale model in which the alignment term is localized. We showed that a phase change phenomenon takes place as diffusion decreases, bringing the system from a "disordered" to an "ordered" state. This effect is related to recently noticed phenomena for the diffusive Vicsek model. We analysed the expansion of the large friction limit around the limiting Vicsek model on the sphere leading to the so-called Self-Organized Hydrodynamics (SOH). This talk is based on papers in collaboration with Bostan, and with Barbaro, Cañizo and Degond.

Date: 12 November 2018 (Monday)
Time: 4:30pm – 5:30pm
Venue: Room 219, Lady Shaw Building,
The Chinese University of Hong Kong, Shatin

All are Welcome