

Department of Mathematics
City University of Hong Kong

Colloquium

Organised by Prof. Tong YANG and Dr Xianpeng HU

Swarming models with local alignment effects: phase transitions & hydrodynamics

by

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Abstract :

We will discuss a collective behavior model in which individuals try to imitate each other's 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: 16 March 2018 (Friday)
Time: 4:30 – 5:30pm
Venue: 1310, Li Dak Sum Yip Yio Chin Academic Building
(AC2)
City University of Hong Kong

**** All interested are welcome ****
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