Special Colloquium

DR. SEBASTIAN MOTSCH
OF CSCAMM AT THE UNIVERSITY OF MARYLAND

UCR

Mathematics

Department

"Mathematical modeling of self-organized dynamics"

Abstract:

In many biological systems, we observe the emergence of self-organized dynamics (e.g. school of fish, ant colonies, pedestrian traffic).

Modeling is an essential tool to better understand their behavior. Based on experimental data, we introduce some recent models which aim to explain such dynamics.

Since biological systems can reach up to millions of individuals, we discuss in a second part how we can derive ``macroscopic models'' from several microscopic models. In contrast with particle systems in physics, models of self-organized dynamics do not conserve momentum or energy. This lack of conservation requires to introduce new tools to study analytically and numerically their macroscopic limits.

Thursday, February 28th

The 2nd Floor of the Surge Building, Room 284

Tea, Coffee & Cookies at 3:40 p.m.

The Talk Begins at 4:10 p.m.

And Ends at 5:00 p.m.

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