PHASE TRANSITION AND PATTERN FORMATION IN THE BEAUTIFUL WORLD OF ACTIVE MATTER

SEMINAR

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Active Matter Systems are made of entities that self-propel by drawing energy from the environment. Fascinating spatio-temporal patterns are commonly exhibited by such systems. These are often associated with phase transitions of one or the other type. Typical examples include interesting clustering dynamics within a flock of birds in the sky or in a school of fish inside a sea. In this lecture I will discuss how simple mathematical models can reproduce, as well as help obtain understanding of, some interesting and complex pattern dynamics in these and other active matter systems. While I will discuss primarily this general picture, towards the end, time permitting, I will also present a set of new results that we have gathered for a model system.

Everyone is invited to attend