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Forum de Physique Statistique @ ENS

Mercredi 5 Avril 2023, 14 :00
LPENS, L357
Domaines : cond-mat.stat-mech

Titre : *Collective motion and its fragility*

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Résumé : *Understanding the collective motion of self-propelling particles, such as flocking birds, is a problem that is almost 30 years old but remains topical. Considering minimal flocking models (the Vicsek model and its variants) I will present several results that tend to show the fragility of the polar ordered phases of collective motion. First, any amount of spatial anisotropy destroys the long-range correlations and giant density fluctuations of these states. Then, the ordered state of the "Malthusian" model, with population dynamics, is unstable to the nucleation of topological defect as well as the ordered state in the Active Ising model that has discrete symmetry.*