

Séminaire

Mardi 4 mars 2025 à 10h30
Amphithéâtre Henri Benoît

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Entropy bounds and their application to non-equilibrium systems

We proved a universal inequality relating the entropy of a system of particles at steady state and the particles' late-time diffusion coefficient. The inequality holds arbitrarily far from equilibrium. It can be used to obtain a lower bound for the diffusion coefficient from the calculated thermodynamic entropy or, conversely, an upper bound for the entropy based on measured diffusion coefficients. We demonstrate the applicability of the relation in several examples. Separately, we derived a functional which takes as input measurable two-point density correlations and gives an upper bound for the entropy. We use it to pin-point and characterize dynamic transitions in driven and active systems.

Les personnes souhaitant rencontrer H. Diamant sont priées de prendre contact avec J. Wolff ou F. Thalmann.