ID de Contribution: **50**   Type: **Oral presentation**

Approximate symmetries in hydrodynamics

mercredi 2 novembre 2022 17:15 (15 minutes)

One of the main goals of physical theories is to provide a useful, universal, effective description of many-body quantum systems at macroscopic scales, regardless of the complicated microscopic dynamics. This is achieved in the context of hydrodynamic effective field theories at finite temperature, by focussing on the dynamics of conserved charges, corresponding to symmetries of the theory, and the Goldstone modes coming from spontaneously broken symmetries. However, in realistic systems most symmetries are only approximate. Then, in ordered phases, the Goldstone modes acquire a small mass as well as a damping rate.

In this talk, after a short introduction to hydrodynamic EFTs, I will explain how locality of hydrodynamics implies that the damping of pseudo-Goldstones is completely determined by their mass and certain diffusive transport coefficients. I will also briefly talk about how such consistency conditions are derived in holographic field theories.

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Classification de Session: Oral Presentations (second in the afternoon)