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Type: Plenary talk

Bootstrapping relativistic transport from causality

Friday 6 September 2024 12:00 (30 minutes)

As an effective field theory, relativistic hydrodynamics is fixed by symmetries up to a set of transport coefficients. In this talk, I will explain how microscopic causality leads to the existence of the hydrohedron: a universal convex geometry in the space of transport coefficients that contains every consistent theory of relativistic transport. I will analytically construct cross-sections of the hydrohedron corresponding to bounds on transport coefficients that appear in sound and diffusion modes for theories without stochastic fluctuations, including all large N holographic QFTs.

Link to publication (if applicable)

<https://arxiv.org/abs/2305.07703>, <https://arxiv.org/abs/2212.07434>

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