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Hydrodynamics of fluctuations and maximum entropy freeze-out

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Fluctuations play crucial role in determining properties of the QCD equation of state and transport in heavy-ion collision experiments. Recent progress in understanding evolution of fluctuations in relativistic hydrodynamics aims at providing predictive description of the fluctuations, including their non-gaussianity. The problem of connecting the predictions of hydrodynamics with experimental measurements of fluctuations requires a description of freeze-out which, similar to hydrodynamics itself, fulfills conservation laws on event-by-event basis. The maximum entropy approach elegantly solves this long-standing problem.

[1] An, Basar, Stephanov, and Yee, Phys.Rev.Lett. 127 (2021) 7, 072301 [arxiv:2009.10742]; arxiv/221213029

[2] Pradeep, Stephanov, Phys.Rev.Lett. 130 (2023) 16, 162301 [arxiv:2211.09142]

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