

# Initial conditions for hydrodynamics from weakly coupled pre-equilibrium evolution

*Tuesday 7 February 2017 11:00 (20 minutes)*

We use effective kinetic theory to simulate equilibration in heavy-ion collisions. We construct a map for out-of-equilibrium initial state to the energy-momentum tensor at a time when hydrodynamics becomes applicable. We apply this map to IPGlasma initial conditions and demonstrate a smooth transition to hydrodynamics. In a phenomenologically favorable range of  $\eta/s$  values, equilibration can be well approximated by a fixed function of a scaled time variable  $(\tau T)/(\eta/s)$ . This scalable kinetic equilibration can be readily applied to other initial state models to provide perturbatively controlled description of pre-equilibrium energy and transverse momentum flow evolution.

References:

JHEP 1608 (2016) 171 [hep-ph/1605.04287]

Phys.Rev.Lett. 115 (2015) 18 [hep-ph/1506.06647]

## Preferred Track

Initial State Physics and Approach to Equilibrium

## Collaboration

Not applicable

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