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Smooth matching of pre-equilibrium evolution to hydrodynamics in heavy ion collisions

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We present explicit implementation of effective kinetic theory
("bottom-up") thermalization scenario and a smooth matching to the subsequent hydrodynamic evolution for realistic initial conditions.
The equilibration dynamics is captured by the out-of-equilibrium evolution of background energy-momentum tensor and linearised transverse energy and momentum response functions, which naturally transitions to hydrodynamic behavior at late times. We demonstrate that physical observables become insensitive to the crossover time. The presented framework of weak coupling kinetic theory is also a promising way of studying chemical equilibration and non-thermal photon production at early stages of heavy ion collisions.

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