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# Equilibrium and dynamic lensing effects near a critical point in the QCD phase diagram

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In this work, we study the effects that different critical regions have on hydrodynamic trajectories both with and without viscous effects. Implementing the parametrized BEST collaboration equation of state [1,2], we find that the size and shape of the critical region is an important factor in determining whether the system will experience critical effects for a variety of initial conditions. We argue that isentropic trajectories where $s/n_B$ is constant (i.e. ideal hydrodynamic evlution) are a poor guide for studying more realistic, viscous hydrodynamic trajectories evidenced by large changes in thermal entropy within the system. Although initial viscous effects may push or pull trajectories towards or away from the critical point, the dynamic lensing effect may be able to focus many of these trajectories towards the critical region [3,4]. These effects also introduce a non-trivial distribution of $\kappa_4$ at freeze-out.

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