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Viscosity in Heavy Ion Collisions

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I first review the successes and failures of describing the dynamics of a heavy ion collision with ideal hydrodynamics. Then, I estimate how a finite (but small!) viscosity modifies the results of these simulations and constrains their region of applicability. In particular, I will discuss the elliptic flow and the spectra of light hadron species. I will also discuss the flow and suppression of heavy quarks which provide a good probe of the transport properties of the medium. Throughout, I will make connections with calculations based on kinetic theory.