

Abstract Submitted
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Mach Cones in Heavy Ion Collisions¹ JORGE NORONHA, Columbia University — We study the fate of the energy deposited by a jet in a heavy ion collision assuming that the medium created is opaque (jets quickly lose energy) and its viscosity is so low that the energy lost by the jet is quickly thermalized. The expectation is that under these conditions the energy deposited gives rise to a Mach cone. We argue that, in general, the behavior of the system is different from the naive expectation and it depends strongly on the assumptions made about the energy and momentum deposited by the jet into the medium. We compare our phenomenological hydrodynamic calculations performed for a variety of energy-momentum sources (including a pQCD-based calculation) with the exact strong coupling limit obtained within the AdS/CFT correspondence. We also discuss the observability of hydrodynamical features triggered by jets in experimentally measured di-hadron correlations at RHIC.

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