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## Sound Propagation on Top of the Fireball

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We study the effect that initial state fluctuations have on final particle correlations in heavy ion collisions. More precisely, we focus on the propagation of initial perturbations on top of the expanding fireball using the conformal solution derived by Gubser and Yarom for central collisions. For small perturbations, the hydrodynamic equations are solved by separation of variables and the solutions for different modes are added up to construct initial point-like perturbations, that are then allowed to evolve until freeze-out. The Cooper-Frye prescription is used to determine the final particle distribution. We present the two-particle correlation functions and their Fourier spectra obtained for different viscosities. We find that viscosity kills the higher harmonics, but that the Fourier spectra presents maxima and minima, similar to what is seen in the study of Cosmic Background Radiation. The difference between the first and the second maximum is used to estimate the viscosity of the medium.

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