

Mach Cones and Two-Particle Correlations: The Origins in a Kinetic Transport Approach

In a microscopic transport model we investigate evolution of conical structures using different source terms. Development of a strong collective behavior near the ideal hydro limit is visible, resulting in formation of Mach Cones. In addition, for the first time the transition from ideal to viscous Mach Cones is demonstrated. We investigate dependence of the Mach Cone angle in different scenarios of energy depositions into the medium. The numerical results on two-particle correlations are compared to an analytical approximation. In our simulations we find that a double-peak structure, as observed in experiments at RHIC, cannot be explained/created by propagation of a high-energy jet.

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Track Classification: Global and collective dynamics