

CONICAL EMISSION IN HEAVY-ION COLLISIONS

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Conical emission was first suggested as a possibility in heavy-ion collisions in the form of Mach-cone shock waves in the mid 1970s. Almost 30 years later, there was revived interested stimulated by the strong away-side modification observed in 2-particle azimuthal correlations in RHIC and SPS data. This modification can be explained by conical emission, from either Mach-cone shock waves or Čerenkov gluon radiation, or by other physics mechanisms, such as large angle gluon radiation, jets deflected by radial flow, and path-length dependent energy loss. Three-particle correlations are being studied in part for their power to distinguish conical emission from other mechanisms. This talk will present an overview of Mach-cone shock waves, Čerenkov gluon radiation, and the current experimental evidence for conical emission in heavy-ion collisions. Prospects for future studies will also be discussed.