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Full Jet Reconstruction at RHIC I

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Partonic energy loss (jet quenching) within the hot and colored medium created in heavy-ion collisions at Relativistic Heavy-Ion Collider (RHIC) is one of the essential tools to provide quantitative understanding of Quark Gluon Plasma. Measurements of jet quenching via single and di-hadron observables have provided initial estimates of the energy density of this hot QCD medium. However, these hadron-triggered observables suffer from well-known biases since they fold production cross-sections with the energy loss itself, providing limited information on the initial energy of the propagating jet. Fully reconstructed jets - in terms of energy flow - will allow a complete exploration of fragmentation patterns and will not suffer from geometrical biases, providing complementary and perhaps exhaustive understanding of partonic energy loss. In this talk we review the complexity and recent progress in full jet reconstruction techniques in heavy-ion collisions. We recall the pioneering hadron triggered measurements, summarize their impact and put them in contrast to the first measurements of fully reconstructed jets in heavy-ions at RHIC.