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Experimental Perspectives on Hard Probes in Heavy Ion Collisions

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Hard probes have been extensively used to probe the hot partonic matter created in heavy ion collisions at RHIC. Measurements of single particles, two particle correlations and jets each provide complementary insights into the interaction of fast partons with the produced matter. Luminosity increases at RHIC have enabled advances in the discriminating power of the measurements through increased statistical precision, the use of identified particles (such as pions, photons, and electrons from heavy flavor decay), and the reaction plane dependence of results. New detector upgrades to STAR and PHENIX for heavy flavor measurements and advances in jet reconstruction techniques both promise new insights. We will discuss what the existing data tell us and the directions of future inquiry.