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Multi-hadron correlations for jet-studies at RHIC MARTIN AN-DREWS, UIC, STAR COLLABORATION — Ultra-relativistic heavy-ion collisions provide a unique environment for the experimental study of a de-confined partonic medium not seen in more elementary (e.g. pp and d+Au) collisions. Modification of jet-like shapes observed via azimuthal di-hadron correlations in central Au+Au collisions gave rise to theoretical investigation of various jet-quenching scenarios as a possible explanations of jet-medium interactions (Cherenkov gluon radiation, machcone shock waves, and others). We use a new three-particle correlation technique to select di-jet events in ultra-relativistic Au+Au collisions and explore jet production, fragmentation and jet energy loss mechanisms in the dense medium created in such collisions at RHIC. Jet shapes and yields extracted from di-hadron jet-axis projections in three-particle correlations for Au+Au events of various centralites are compared to those measured in pp and d+Au events and a simple two-component model is used to visualize potential effects of energy loss.

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