

Abstract Submitted
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Eccentricity Distribution of the Initial Conditions for Uranium-Uranium Collisions ANDREW GOLDSCHMIDT, ZHI QIU, ULRICH HEINZ, The Ohio State University Department of Physics — We provide a case study illustrating how the analysis of relativistic uranium-uranium collisions requires paying careful attention to the collision geometry. Because of the football-like shape of uranium, U-U collisions probe a much larger space of collision geometries than collisions between spherical nuclei such as Pb. In central uranium events, where the colliding nuclei fully overlap with each other, collision orientations can range between two extremes. In side-side events, the major axes of the elliptic uranium nuclei point perpendicular to the beam line, while in tip-tip events the major axes are parallel to the beam direction. These orientations affect both the overlap area of the Lorentz contracted nuclei and the number of collisions between nucleon pairs. Our study looks at these variables in a comparison of the dependence of the initial fireball eccentricity and nuclear overlap area on the total observed multiplicity with what was traditionally found in spherically symmetric gold-gold or lead-lead collisions, where orientation played no role.

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