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Knee Structure in Elliptic Flow from Hydrodynamic Simulations for U+U Collisions ANDY GOLDSCHMIDT, ZHI QIU, ULRICH HEINZ, The Ohio State University — We report on a "knee"-like structure in the elliptic flow within ultra-central ($< 0.5\%$ centrality) U+U collisions at RHIC. A product of the ellipsoidal deformation of Uranium nuclei, the knee arises from a preferential selection of tip-on-tip collisions in very high multiplicity events. It is seen in the centrality dependence of the initial ellipticity of the collision profile, and found well preserved in the elliptic flow after event-by-event hydrodynamic evolution. In the knee region the conversion efficiency v_2/ε_2 between the initial ellipticity ε_2 and the final elliptic flow v_2 is found to be almost independent of multiplicity. We argue that a non-monotonic structure of v_2/ε_2 as a function of collision centrality seen by the STAR Collaboration must be a model artifact. We discuss the sensitivity of our results to event-by-event fluctuations of the multiplicity per wounded nucleon. We find that the knee structure survives standard Γ-distributed multiplicity fluctuations, and that extinguishing effects found in a fluctuation model recently studied by Rybczynski et al. [Phys. Rev. C 87 (2013) 044908] are caused by the extreme hot spots included in that model.

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