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Comparison of Hydrodynamic Calculations of Heavy Ion Collisions with Different Equations of State RON SOLTZ, Lawrence Livermore National Laboratory, SCOTT MORELAND, Duke University — The QCD Equation of State (EoS) is an essential ingredient for the hydrodynamic models used to study heavy ion collisions. Recent results by the HotQCD and Wuppertal-Budapest collaborations lattice gauge calculations of the QCD EoS at the continuum limit show good agreement within errors. However it is unknown whether current errors are sufficient for current simulations or whether further improvements are needed. We explore this question by performing hydrodynamic calculations with the VISHNU 2+1D hydrodynamic code with fluctuating initial conditions and UrQMD cascade code for the two EoS calculations and a sampling of EoS curves within the given errors. Comparisons are made to spectra (π, K, p), flow (v_2, v_3), and azimuthally averaged HBT radii for 200 GeV Au+Au collisions. Relative variations in the results and comparisons to data where appropriate will be presented and discussed.

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