Abstract Submitted
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The Lattice QCD Equation of State and Implications for Hydrodynamic Modeling of Heavy Ion Collisions[1] RON SOLTZ, Lawrence Livermore National Lab, HOTQCD COLLABORATION — We present results for the QCD Equation of State of at zero baryon density calculated on a lattice of dimensions $32^3 \times 8$ with $m_l = 0.1m_s$ using two improved staggered fermion actions, p4 and asqtad. Calculations were performed along lines of constant physics with a pion mass of approximately 200 MeV, and were carried out using more than 100M cpu-hours on BG/L supercomputers at LLNL, BNL, and UCSD. Both calculations are consistent with a cross-over transition in the range 185 – 195 MeV/c. Recent results from the lattice will be compared to those currently used as input to hydrodynamic models. Consequences for calculations of observables such as spectra, flow, and space-time measurements in heavy ion collisions will be discussed.

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