

Abstract Submitted  
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**Measurement of the low mass dielectron continuum in  $\sqrt{s_{NN}} = 200$  GeV Au+Au collisions in the PHENIX Experiment at RHIC** RALF AVERBECK, Stony Brook University, PHENIX COLLABORATION — Electromagnetic probes are ideally suited to investigate hot and dense matter produced in high energy heavy ion collisions. They do not undergo strong interactions and thus probe the full time evolution of the collision. The dielectron continuum is rich in physics. Dalitz decays of light hadrons and direct decays of vector mesons, which might be modified in the medium, and correlated charm decays contribute to the spectrum. Furthermore, exotic states, e.g quasi-particles predicted to exist in the medium only beyond the phase transition, might leave their footprint in the continuum. Although correlated  $e^+e^-$  pairs are rare, the  $0.24 \text{ nb}^{-1}$  collected by PHENIX for Au+Au collisions at  $\sqrt{s_{NN}} = 200$  GeV in 2004 provides a significant sample to investigate the dilepton continuum. The continuum and its resonances are separated from the combinatorial background via an event mixing technique. Mass spectra are presented and compared with the expectations from decays of hadronic sources.

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