Abstract Submitted
for the DNP06 Meeting of
The American Physical Society

Non-photonic electron yields from Au+Au collisions at $\sqrt{s_{NN}}$ = 62 GeV and Cu+Cu collisions at $\sqrt{s_{NN}}$ = 200 GeV at STAR. ANDERS KNOSPE, Yale University, STAR COLLABORATION — High-energy nucleus-nucleus collisions at RHIC allow physicists to study the behavior of nuclear matter at high temperatures and densities, where a new phase of matter, the quark-gluon plasma, is predicted to exist. All partons are thought to loose energy through gluon radiation as they pass through the hot and dense medium; it is expected that heavy quarks lose less energy in-medium than light quarks due to the suppression of small-angle gluon radiation (the dead cone effect), thus providing a sensitive probe of the medium. Heavy-quark production can be measured through the spectrum of non-photonic electrons, which is dominated by the decays of heavy-flavor mesons. The method used to identify non-photonic electrons in STAR data is described. Preliminary non-photonic electron spectra are being extracted for Au+Au collisions at $\sqrt{s_{NN}} = 62$ GeV and for Cu+Cu collisions at $\sqrt{s_{NN}} = 200$ GeV. They are compared to the non-photonic electron yields from $p + p$ and Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV. This provides a test of the dependence of the non-photonic electron yield on collision energy and system size.

Anders Knospe
Yale University

Date submitted: 30 Jun 2006 Electronic form version 1.4