Abstract Submitted
for the APR10 Meeting of
The American Physical Society

**Performance studies of the Silicon Detectors in STAR towards microvertexing of rare decays** JONATHAN BOUCHET, Kent State University, STAR COLLABORATION — Heavy quarks ($b$ and $c$) carrying hadron production as well as their elliptic flow can be used as a probe of the thermalization of the medium created in heavy ions collisions. Direct topological reconstruction of $D$, $B$ mesons and $\Lambda_c$ baryon decays is then needed to obtain this precise measurement. To achieve this goal the silicon detectors of the STAR experiment are explored. These detectors, a Silicon Drift (SVT) 3-layer detector [1] and a Silicon Strip one-layer detector [2] provide tracking very near to the beam axis and allow us to search for heavy flavour with microvertexing methods. $D^0$ meson reconstruction including the silicon detectors in the tracking algorithm will be presented for the Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV, and physics opportunities will be discussed.

[1] R. Bellwied et al., *Nucl. Inst. Methods* **A499** (2003) 640.
[2] L. Arnold et al., *Nucl. Inst. and Methods* **A499** (2003) 652.

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Date submitted: 22 Oct 2009 Electronic form version 1.4