

Abstract Submitted  
for the DNP08 Meeting of  
The American Physical Society

**Full jet reconstruction in  $p + p$  collisions at  $\sqrt{s} = 200$  GeV in PHENIX** YUE SHI LAI, Columbia University — Full jet reconstruction in acceptance-limited detectors is challenging and has been rarely attempted. We developed a Gaussian filter based jet reconstruction algorithm that not only reduces the sensitivity to the detector acceptance limit, but also reduces background effects from soft QCD in hadronic collisions and the heavy ion background. The algorithm in Monte- Carlo simulations has been found to be comparable and in some variables better than the conventional cone and  $k_{\perp}$  algorithms [1]. We present the first results in applying the Gaussian filter based jet reconstruction in  $p + p$  collisions at  $\sqrt{s} = 200$  GeV using the PHENIX detector, thus demonstrating the applicability of jet reconstruction in an acceptance-limited detector. [1] Y.-S. Lai, B. A. Cole, “Jet reconstruction in hadronic collisions by Gaussian filtering”, arXiv:0806.1499 (2008).

Yue Shi Lai  
Columbia University

Date submitted: 28 Jun 2008

Electronic form version 1.4