Abstract Submitted
for the APR05 Meeting of
The American Physical Society

**Azimuthal Anisotropy at Intermediate Rapidity in $\sqrt{S_{NN}}$ = 200 GeV Au-Au Collisions in PHENIX at RHIC-BNL** BENJAMIN NORMAN, Los Alamos National Laboratory, PHENIX COLLABORATION — In mid-central heavy ion collisions, the nuclear overlap region is almond shaped. This spatial anisotropy leads to a momentum space anisotropy, which has symmetry about the plane defined by the beam axis and the impact parameter. This reaction plane (or event plane) can be determined in experiment using the final particle azimuthal distribution. The reaction plane resolution depends on particle multiplicity, azimuthal angle resolution, azimuthal hermeticity, and the amount of actual asymmetry that exists in the collision. We will present the effect of these factors on the resolution of the reaction plane for Au-Au collisions in general and more specifically for the pad planes of the PHENIX Multiplicity Vertex Detector (MVD). These pad planes are in the pseudorapidity range $1.8 < |eta| < 2.6$ on either side of the vertex region for which PHOBOS data (nucl-ex/0403025) suggest a $v_2$ of about 4 percent for mid-central Au-Au collisions at $\sqrt{S_{NN}}$ of 200 GeV.

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Date submitted: 13 Jan 2005 Electronic form version 1.4