

**High- p_T π^0 production with respect to the reaction plane
in $\sqrt{s_{NN}} = 200$ GeV Au+Au collisions at PHENIX**

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The origin of the azimuthal anisotropy in particle yields at high p_T ($p_T > 5$ GeV/ c) in RHIC collisions remains an intriguing puzzle. Traditional flow and parton energy loss models have failed to completely explain the large v_2 observed at high p_T . Measurement of this parameter at high p_T will help to gain an understanding of the interplay between flow, recombination and energy loss, and the role they play in the transition from soft to hard physics. Neutral mesons measured in the PHENIX experiment provide an ideal laboratory for such studies. Additional insight is gained by studying the nuclear modification factor, R_{AA} , as a function of angle of emission with respect to the reaction plane. We present recent measurements of π^0 yields with respect to the reaction plane, and discuss the impact current models have on our understanding of these mechanisms, especially at high p_T . Additionally, by comparisons with the inclusive photon spectra, any insights into the direct photon v_2 will be studied.