Anisotropic Flows in Cu+Au Collisions at $\sqrt{s_{NN}} = 200$ GeV

L.W. Chen[1] and C.M. Ko

[1]*Institute of Theoretical Physics, Shanghai Jiao-Tong University, Shanghai 200240, China*

Using a multi-phase transport (AMPT) model, we have studied the anisotropic flow of charged hadrons in asymmetric Cu+Au collisions at the Relativistic Heavy Ion Collider [1]. Compared with results for symmetric Au+Au collisions, charged hadrons produced around midrapidity in asymmetric collisions are found to have a stronger directed flow v_1 and their elliptic flow v_2 is also more sensitive to parton scattering cross section. While higher-order flows v_3 and v_4 are small at all rapidities, both v_1 and v_2 in these collisions are appreciable and show an asymmetry in forward and backward rapidities as shown in Fig.1.

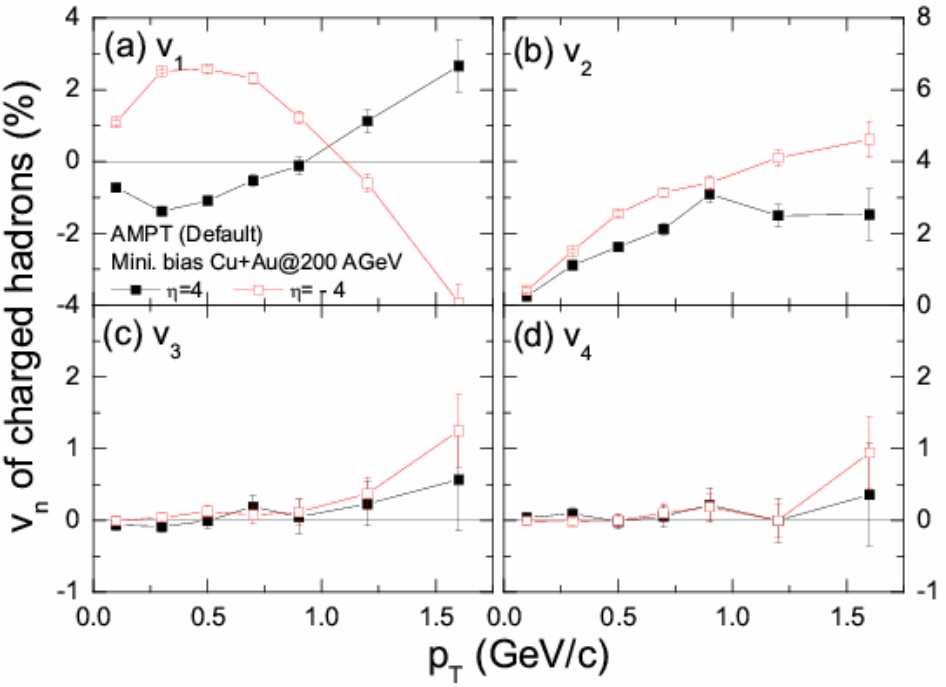

Figure 1. Transverse momentum dependence of v_1 (a), v_2 (b), v_3 (c) and v_4 (d) for charged hadrons at large forward (η=4, solid squares) and backward pseudorapidities (η=-4, open squares) from minimum bias events of Cu+Au collisions at $\sqrt{s_{NN}} = 200$ AGeV.

[1] L.W. Chen and C.M. Ko, Phys. Rev. C **73**, 014906 (2006).