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PHENIX v_2 measurement of single electrons from heavy flavor meson decays in Au+Au collision at $\sqrt{s_{NN}}=62.4\text{GeV}$ and charm beauty separation using VTX at 200GeV

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The measurement of azimuthal anisotropy v_2 of single electrons from semi-leptonic decay of open heavy flavor mesons in PHENIX experiment has provided important understanding of the property of the quark gluon plasma, especially the geometrical dependence of partonic energy loss. PHENIX results of v_2 in Au+Au collision at $\sqrt{s_{NN}}=200\text{GeV}$ for heavy-flavor decays are comparable to the v_2 measurements of other hadrons. This indicates that both the flow and the energy loss characteristics in heavy quarks are similar to light quarks, which is not well understood.

We extend the PHENIX systematic study of azimuthal anisotropy by reducing the beam energy to $\sqrt{s_{NN}}=62.4\text{GeV}$. At this energy, the medium formed in Au+Au collisions is expected to have a lower energy-density. However, we will show that the heavy flavor electron v_2 at the lower beam energy is similar within the experimental uncertainties to the higher beam energy result.

All the current PHENIX heavy flavor v_2 measurements are a mixture of charm and beauty. With the new detector - Silicon Vertex Tracker (VTX) installed in run11, we are able to measure v_2 separately for charm and beauty. The status of v_2 measurements separating single electrons from semi-leptonic decay of D and B mesons using the VTX will be presented

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