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## Measurements of the Correlation between Jets and the Reaction Plane in STAR at RHIC

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The relationship between jet properties and the underlying geometry of the medium produced in heavy ion collisions can be explored through a measurement of the correlation between the axes of reconstructed jets and the reaction plane (defined as jet  $v_2$ ). Such a measurement provides information on the pathlength dependence of medium-induced parton energy loss as well as biases in jet-finding methods. In addition, an estimate of jet  $v_2$  is necessary for background-subtraction in jet-triggered correlation analyses, which are used to study medium-induced jet shape modification. However, jet  $v_2$  measurements are complicated by biases in the event plane calculation due to the presence of the jet, leading to an overestimation of jet  $v_2$ . In order to reduce the artificial jet-event plane bias, we utilize detectors at forward pseudorapidity ( $\eta$ ), such as the Forward Time Projection Chambers located at  $2.5 < |\eta| < 4$  and the Zero Degree Calorimeter Shower Maximum Detectors at  $|\eta| > 6.3$ , to determine the event plane when measuring  $v_2$  of reconstructed jets at mid-rapidity ( $|\eta| < 1$ ). We present first results of jet  $v_2$  measurements in  $\sqrt{s_{NN}} = 200$  GeV Au+Au collisions in STAR and their implications.

**Primary author:** OHLSON, Alice (Yale University)

**Presenter:** OHLSON, Alice (Yale University)

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