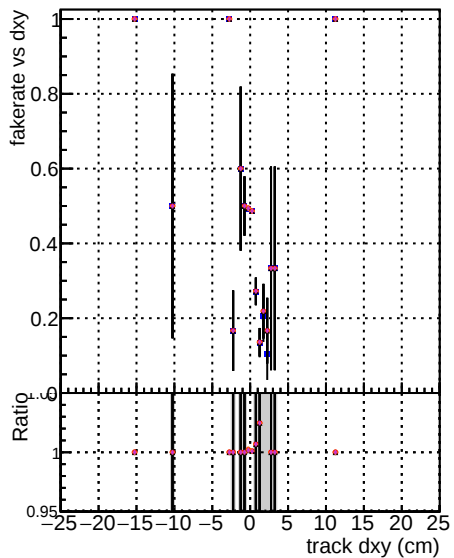
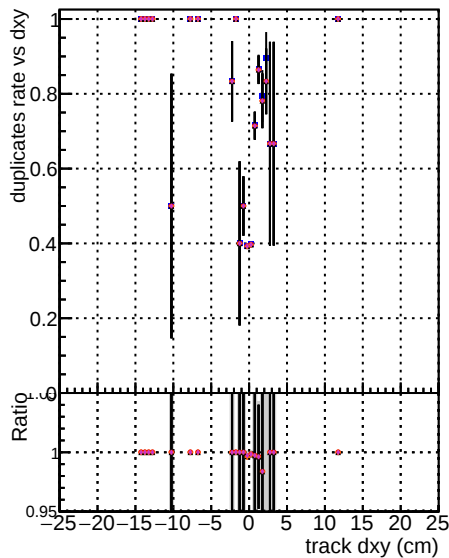


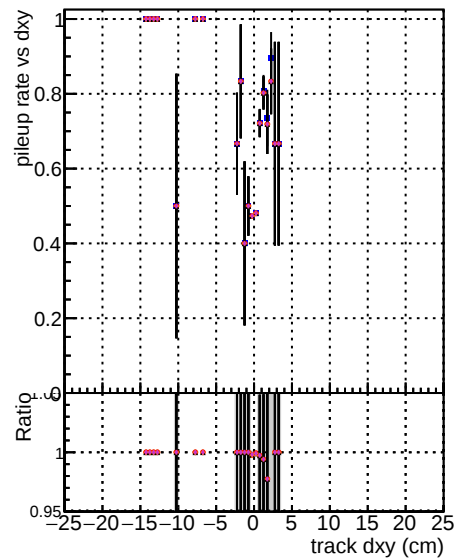
### Fake rate vs dxy



### Duplicates Rate vs Dxy



### Pileup rate vs dxy



Fake rate vs d

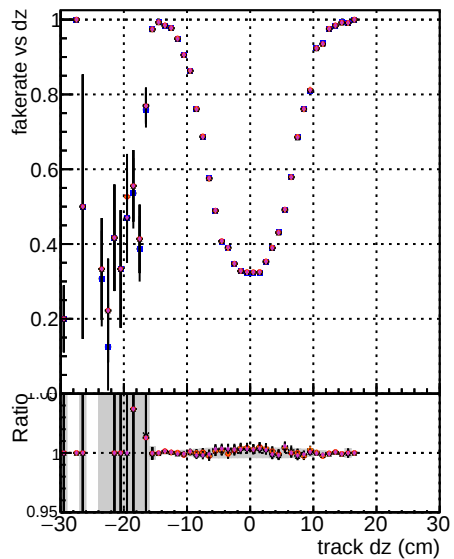


Figure 1 consists of two vertically stacked panels sharing a common x-axis labeled 'track dz (cm)' ranging from -30 to 30. The top panel is titled 'duplicates rate vs dz' and shows the duplicate rate on the y-axis (0 to 1). It contains three data series: black circles, red circles, and blue circles, each with vertical error bars. The rates are generally high (near 1.0) for negative track dz and decrease as track dz increases, peaking around 0.55 at track dz = 0. The bottom panel is titled 'Ratio' and shows the ratio on the y-axis (0.95 to 1.0). It displays the same three data series with error bars. The ratios are mostly close to 1.0, with some fluctuations and shaded regions indicating uncertainty, particularly for negative track dz values.

Figure 1 consists of two panels. The top panel plots the pileup rate (y-axis, 0 to 1) against track  $dz$  (x-axis, -30 to 30 cm). It shows three data series: black circles for no pileup, blue circles for 10% pileup, and magenta circles for 20% pileup. The bottom panel plots the ratio of the pileup rate to the no pileup rate (y-axis, 0.95 to 1.0) against track  $dz$  (x-axis, -30 to 30 cm). It shows the same three data series, with shaded regions indicating the 10% and 20% pileup levels.