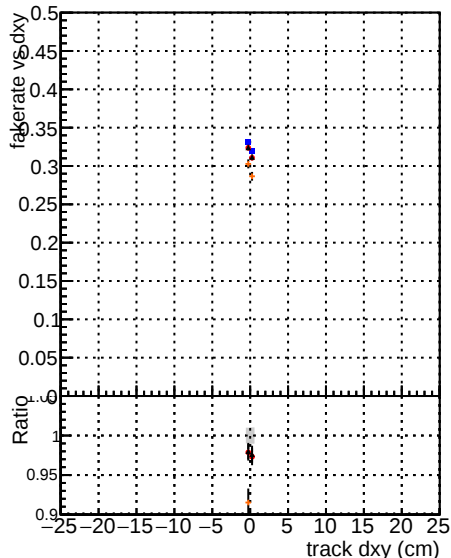
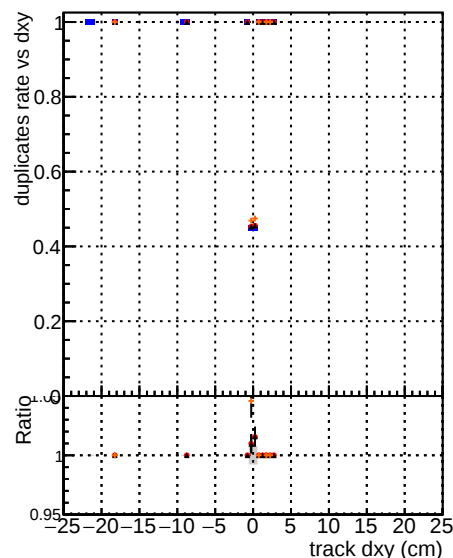


Fake rate vs dxy



Duplicates Rate vs Dxy



Pileup rate vs dxy

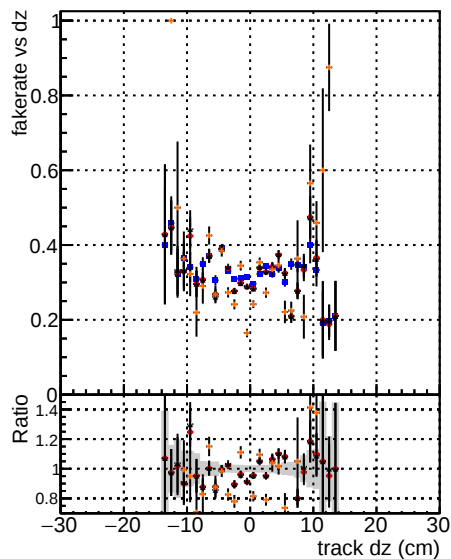
[illegible]

Figure 1 consists of two panels. The top panel is a scatter plot with error bars showing the duplicate rate (y-axis, ranging from 0.2 to 1.0) versus track dz (x-axis, ranging from -30 to 30 cm). The data points are categorized by track selection criteria: $p_T > 100$ GeV (blue circles), $p_T > 100$ GeV and $|\eta| < 1.1$ (orange circles), and $p_T > 100$ GeV and $|\eta| < 1.1$ and $dR_{\text{min}} > 0.4$ (black circles). The bottom panel shows the ratio of the duplicate rates for the three criteria (y-axis, ranging from 0.9 to 1.0) versus track dz (x-axis, ranging from -30 to 30 cm). The ratio is plotted for the same three track selection criteria, with the ratio for $p_T > 100$ GeV and $|\eta| < 1.1$ and $dR_{\text{min}} > 0.4$ being the highest (black circles) and the ratio for $p_T > 100$ GeV being the lowest (blue circles).