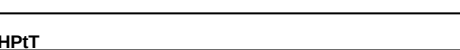


Fake rate vs dxy



Duplicates Rate vs Dxy



Pileup rate vs dxy

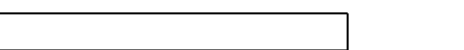


Figure 1 consists of three subplots showing the dependence of different rates on track dz (cm). Each plot has a top y-axis for the rate (0 to 1) and a bottom y-axis for the ratio (0.95 to 1.05). The x-axis for all plots is track dz (cm) from -30 to 30. Data points are red circles with error bars. A solid orange line represents the fit, and a dashed orange line represents the extrapolation. The bottom panel of each plot shows the ratio of the fit to the data points, with a black shaded region indicating the uncertainty.

- Left Plot:** Fakerate vs dz . The faking rate is high at low dz and decreases as dz increases. The ratio plot shows a clear dip around $dz = 0$.
- Middle Plot:** Duplicates rate vs dz . The duplicates rate is low at low dz and increases as dz increases. The ratio plot shows a clear peak around $dz = 0$.
- Right Plot:** Pileup rate vs dz . The pileup rate is low at low dz and increases as dz increases. The ratio plot shows a clear peak around $dz = 0$.

Figure 1 consists of two panels. The top panel shows the ratio of duplicate rates vs dz for the full sample (red circles) and the ratio of duplicate rates for the sample with $dz < 20$ cm (orange circles). The bottom panel shows the ratio of duplicate rates for the sample with $dz < 20$ cm (orange circles) and the ratio of duplicate rates for the sample with $dz < 20$ cm and $|dz| < 10$ cm (black circles). The x-axis is track dz (cm) from -30 to 30. The y-axis is Ratio from 0.95 to 1.05. A vertical orange line is at $dz = 20$ cm.

Figure 1 consists of two panels. The top panel is a scatter plot with error bars showing the pileup rate (Ratio) as a function of track dz (cm). The x-axis ranges from -30 to 30 cm, and the y-axis ranges from 0.0 to 1.0. The data points are red circles with vertical error bars. The pileup rate is generally high, peaking around 0.95 for dz between -10 and 10 cm. There are significant fluctuations at the edges of the distribution, particularly around $dz \approx \pm 18$ cm. The bottom panel shows the ratio of the pileup rate to the nominal pileup rate (Ratio) as a function of track dz (cm). The x-axis is the same as the top panel, and the y-axis ranges from 0.95 to 1.05. The data points are red circles with vertical error bars. The ratio is mostly close to 1.0, with some fluctuations and a sharp peak around 18 cm.