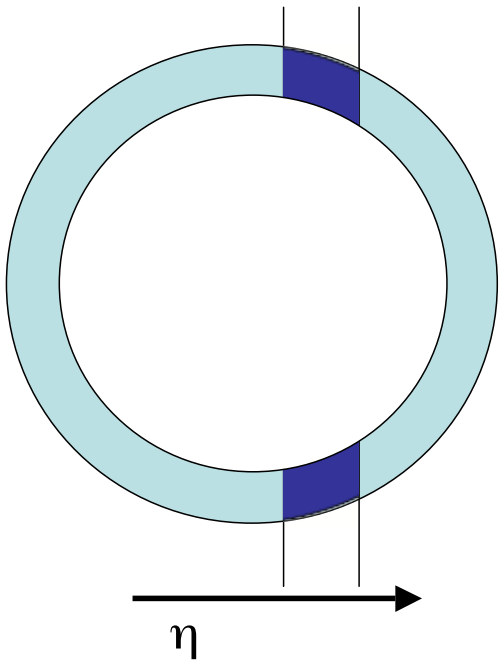
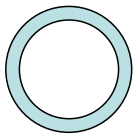
Jet shapes and corrections in events with pile-up

Offset Correction



For the annulus 

For each bin of η 

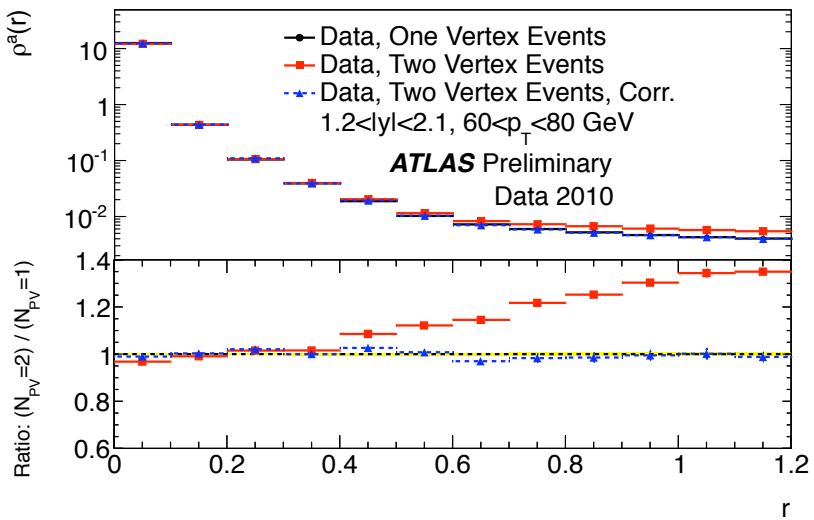
Calculate the area (A) of the annulus inside that bin 

The number of towers in this area is simply N=A/0.01

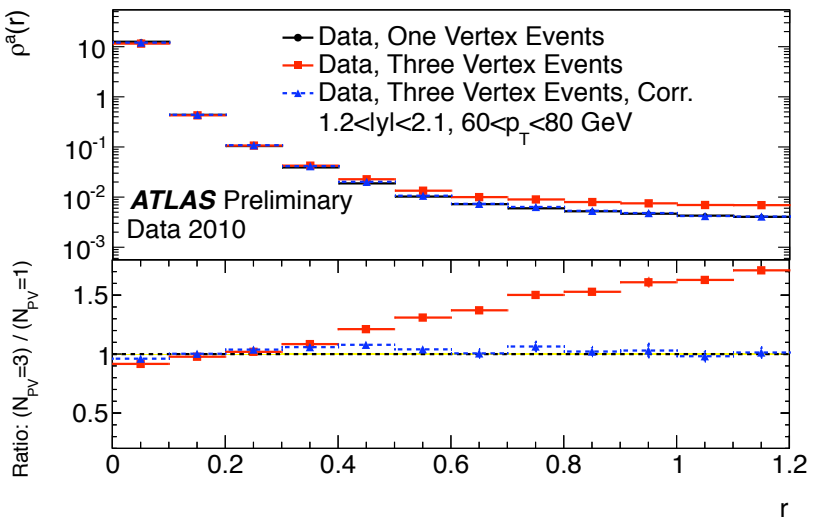
Adjust the pT of the annulus using the offset correction in that bin

Jet shapes offset corrections in events with pile-up

$$\rho^a(r) = \frac{1}{\pi\left[(r+\delta r/2)^2 - (r-\delta r/2)^2\right]} \times \left\langle \frac{p_T\left(r-\frac{\delta r}{2}, r+\frac{\delta r}{2}\right)}{p_T(0, 0.7)} \right\rangle \quad (4)$$



(a) Comparison of $N_{\mathrm{PV}} = 1$ and 2 ($1.2 < |y^{\mathrm{jet}}| < 2.1$)



(b) Comparison of $N_{\mathrm{PV}} = 1$ and 3 ($1.2 < |y^{\mathrm{jet}}| < 2.1$)

Figure: Measured sum p_T in annuli around the jet axis, divided by the total p_T around the jet, and normalized by the area of each annulus. Events are selected with more than one reconstructed vertex. The shapes of jets in the rapidity range $1.2 < |y^{\mathrm{jet}}| < 2.1$ are compared, before and after the offset corrections, in events with (a) one and two vertices, and (b) one and three vertices. The corrected distribution is also shown (blue triangles). Note that the single vertex data (black circles) are partially hidden behind the corrected multi-vertex data.