

## Last time Review

### □ Smearing Source

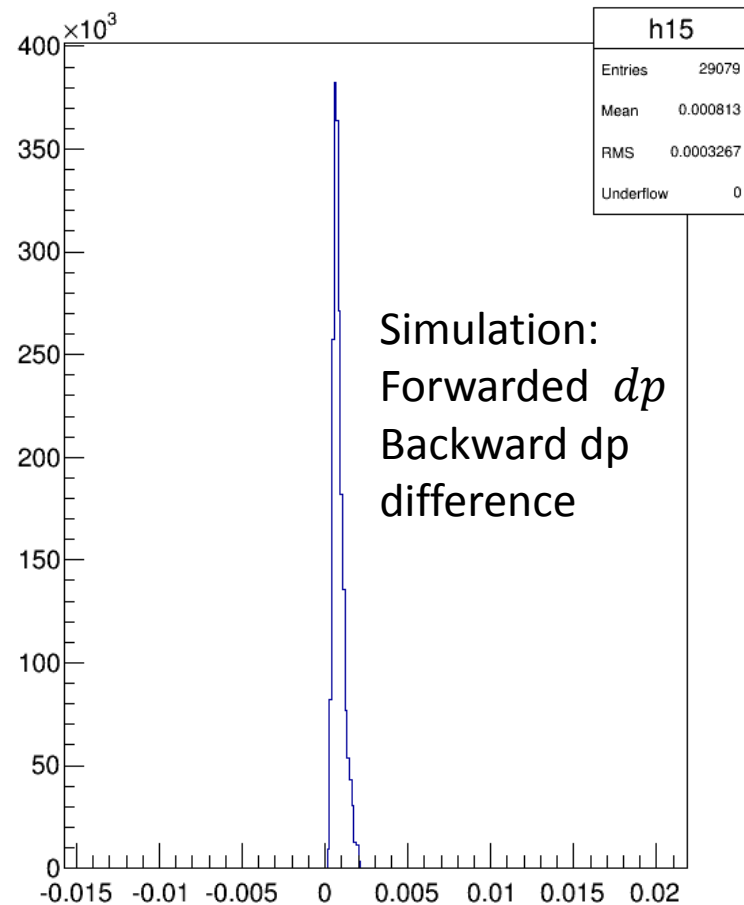
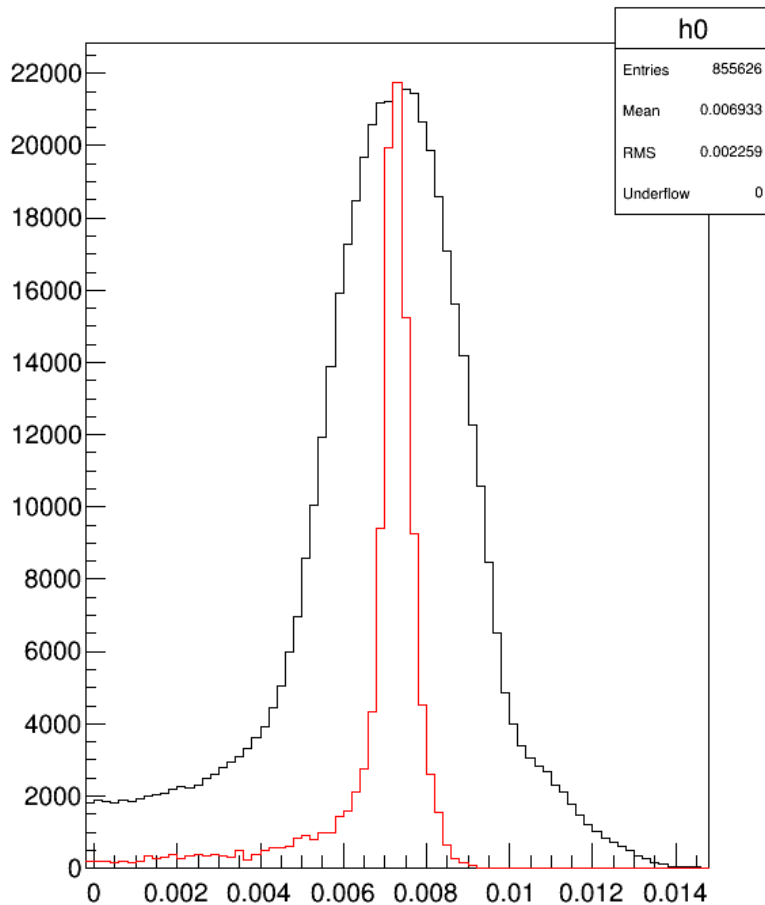
- beam:  $3e-5$
- VDC

$$\sigma_{x,y} \approx 0.1\text{mm}, \sigma_{th,ph} \approx 0.5\text{mrad}$$

- Energy loss model
- Multiple Scattering
- Elastic scattering (dp versus angle)
- HRS momentum:  $2e-4$

# Model vs Data

2.2 GeV, 5T, Longitudinal empty run 5650  
h0 h15



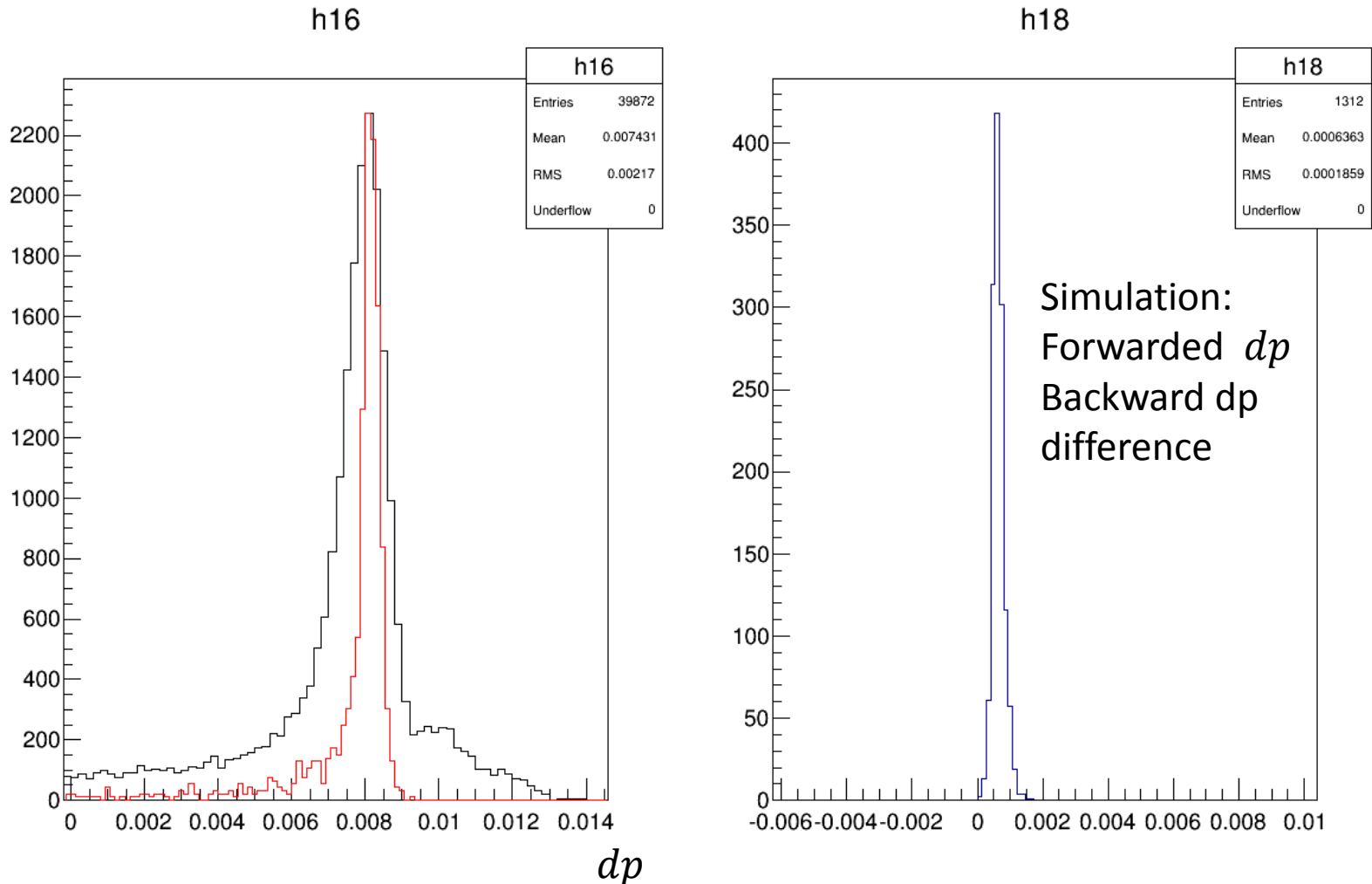
$dp$

□ Black: Data VS. Red: simulation: Total empty run

□  $\sigma_{x,y} \approx 0.1\text{mm}, \sigma_{th,ph} \approx 0.5\text{mrad}$

# Model vs Data

2.2 GeV, 5T, Longitudinal empty run 5650

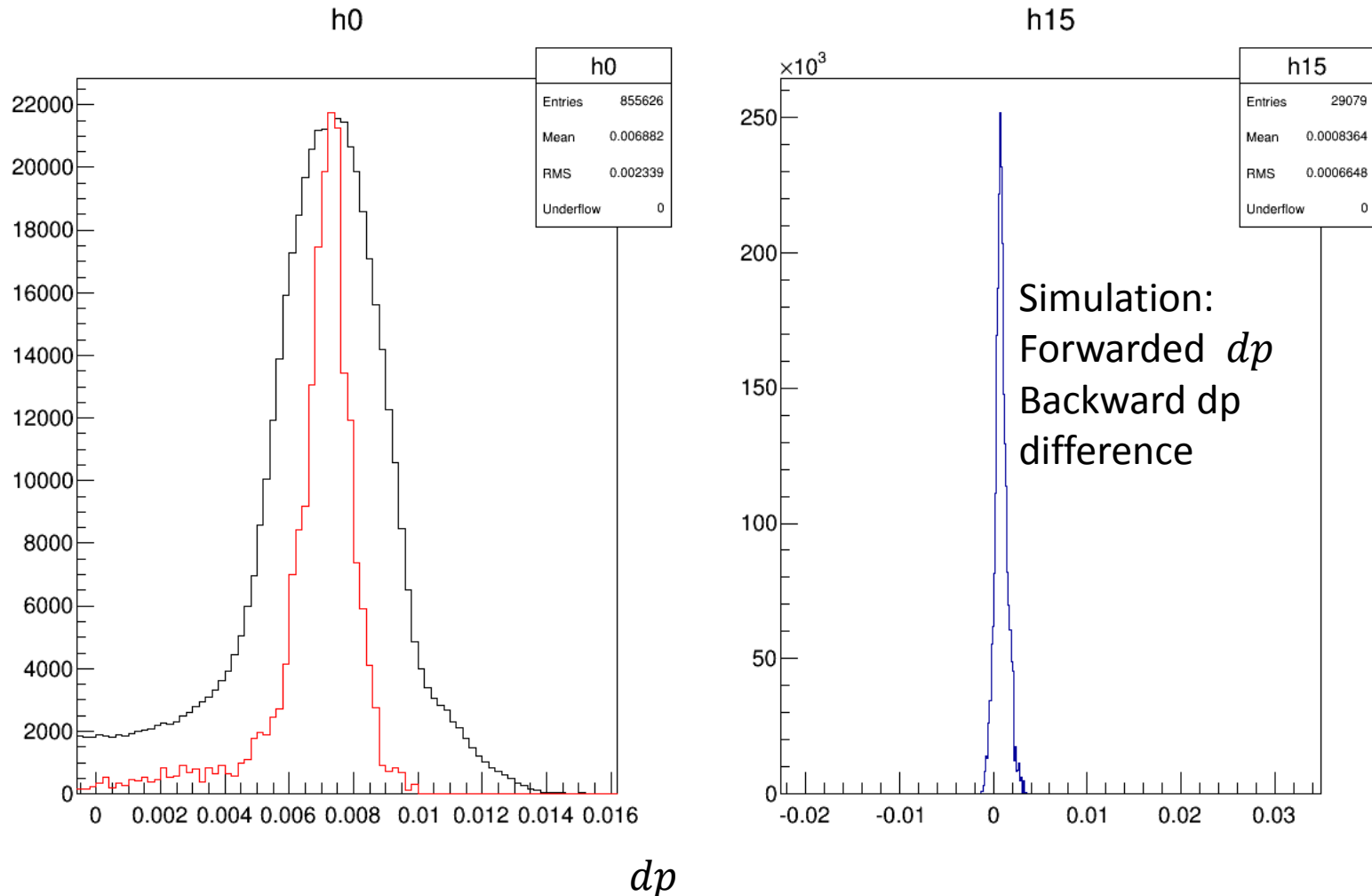


Black: Data VS. Red: simulation: beam size center 2mm radius

$\sigma_{x,y} \approx 0.1\text{mm}, \sigma_{th,ph} \approx 0.5\text{mrad}$

# Model vs Data

2.2 GeV, 5T, Longitudinal empty run 5650



Black: Data VS. Red: simulation: Total empty run

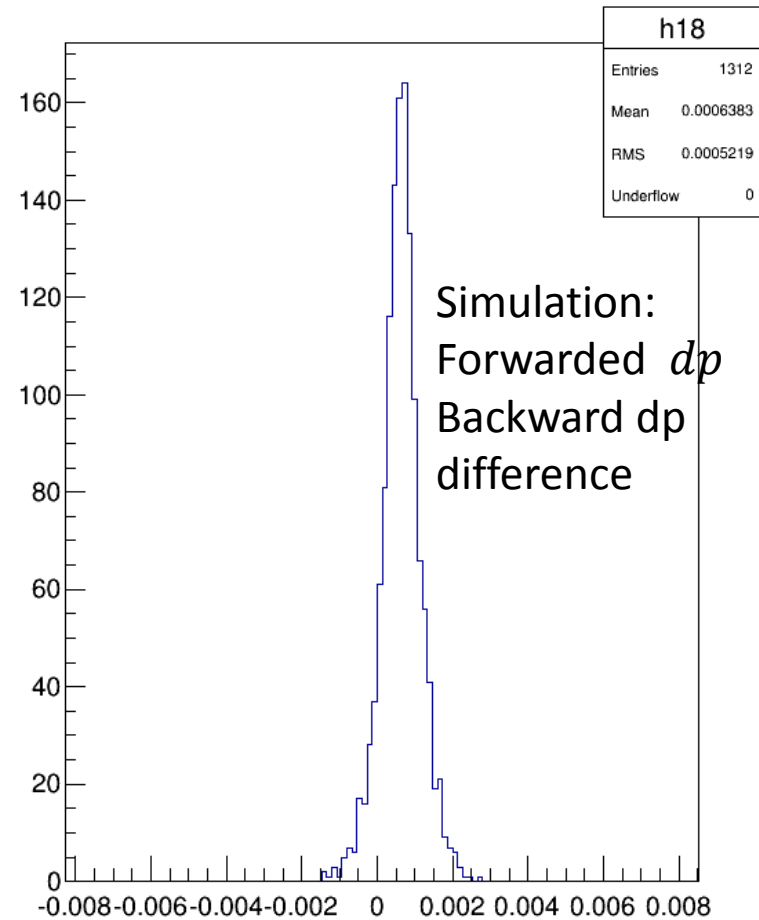
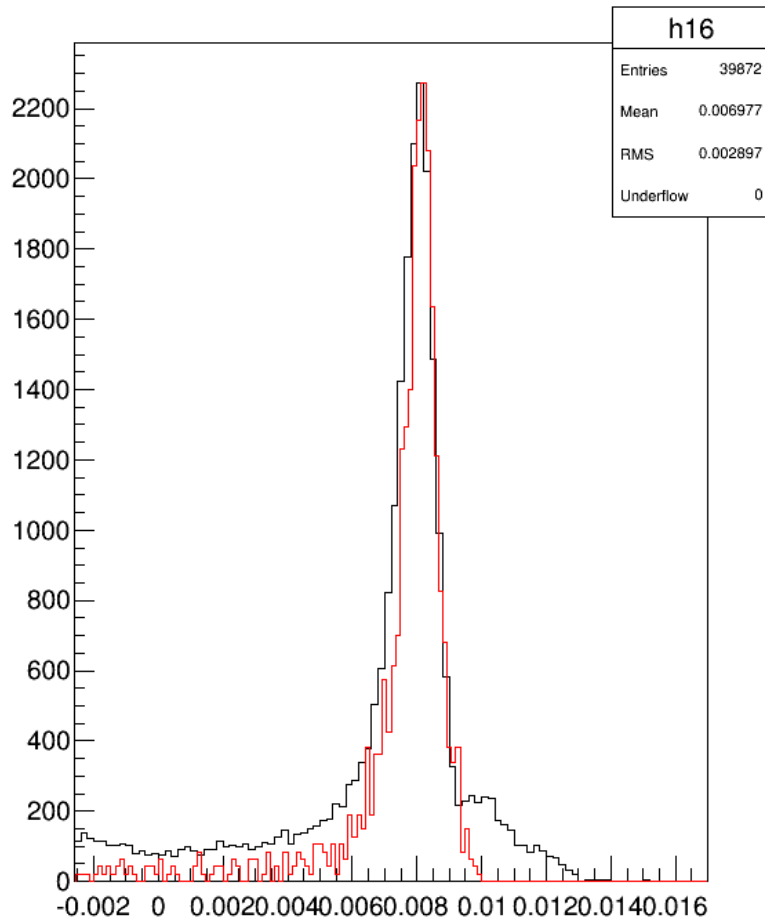
$\sigma_{x,y} \approx 1mm, \sigma_{th,ph} \approx 5mrad$

# Model vs Data

2.2 GeV, 5T, Longitudinal empty run 5650

h16

h18



$dp$

Black: Data VS. Red: simulation: beam size center 2mm radius

$\sigma_{x,y} \approx 1mm, \sigma_{th,ph} \approx 5mrad$