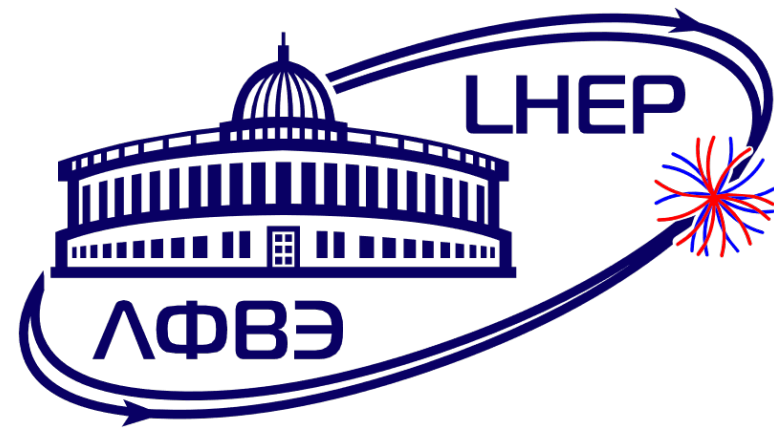




BBC and ST simulation studies



SPD BBC spatial resolution studies in p-p collisions &
SPD Straw Tracker occupancy studies in O-O collisions

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25th November 2025, Moscow

BBC Spatial Resolution

Fig. 7 - $r_{center} - r_{hit}$ distribution

Resolution:
 $\sigma_r = 17.3 \text{ mm}$

Reference:

$h_x \times h_y \approx 45.0 \text{ mm} \times 55.0 \text{ mm}$

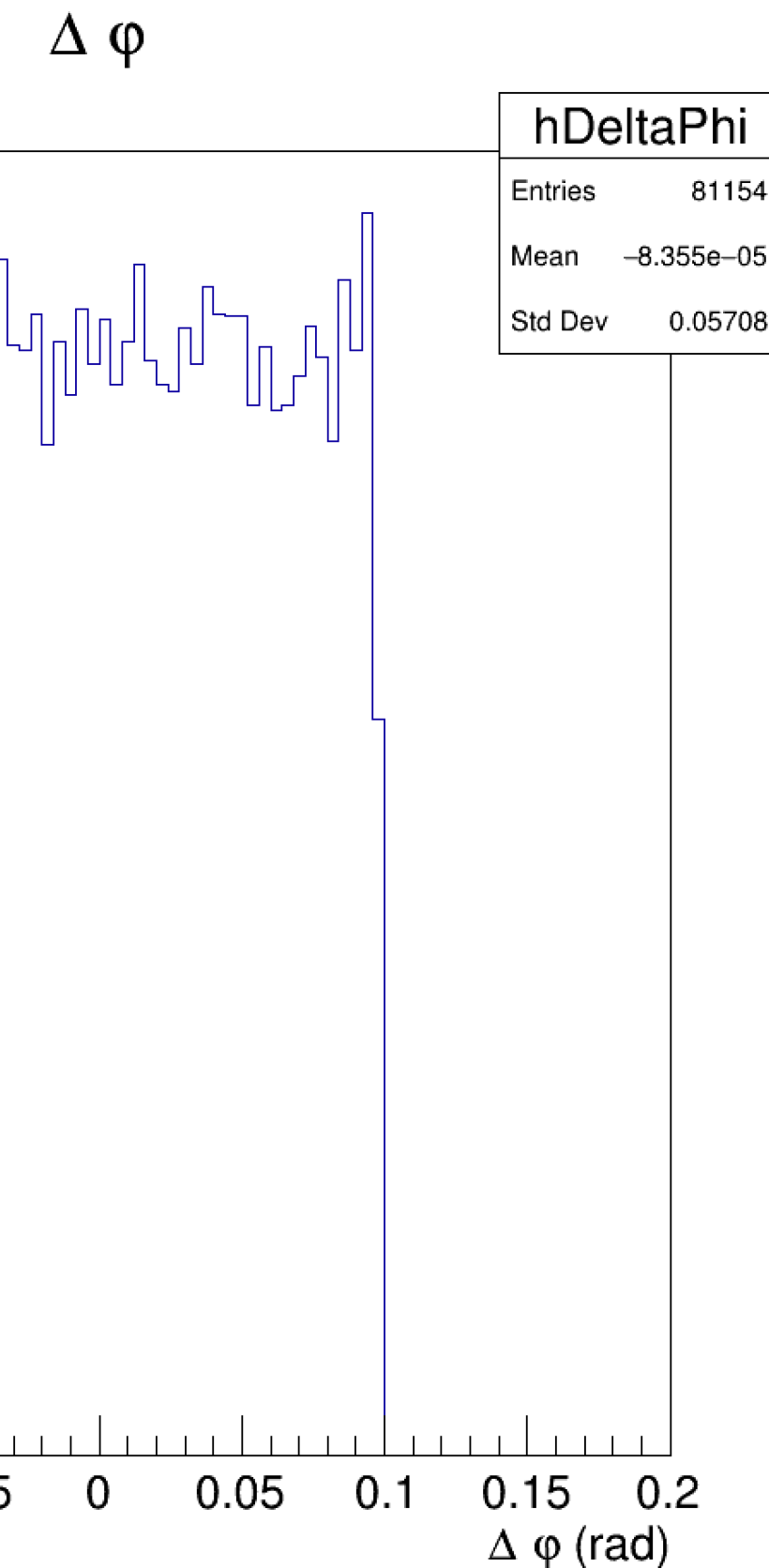
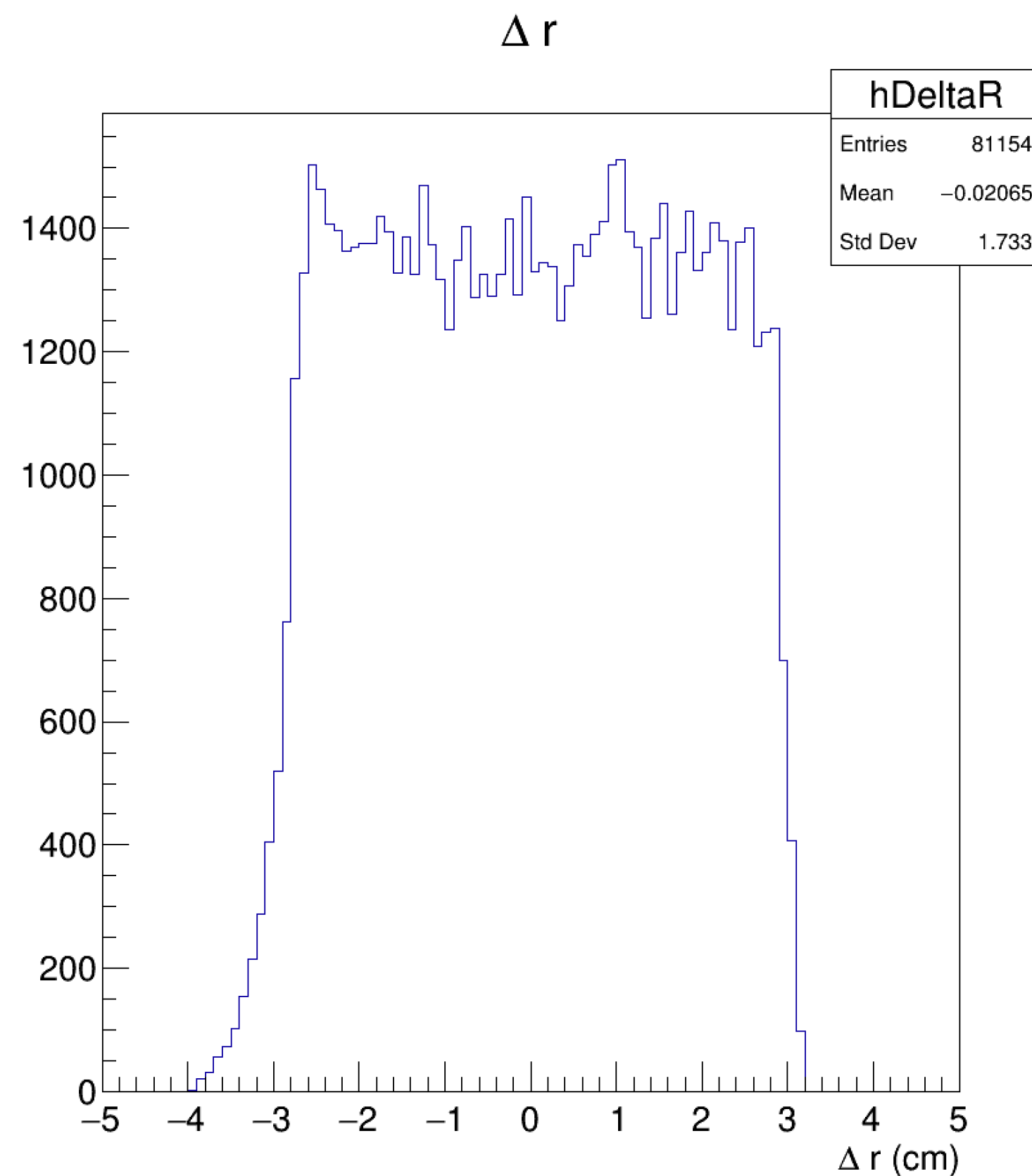


Fig. 8 - $\phi_{center} - \phi_{hit}$ distribution

Resolution:
 $\sigma_\phi = 0.057 \text{ rad}$
or
 $\sigma_\phi = 3.27^\circ$

Reference:
 $\Delta \phi \approx 11.25^\circ$

Simulation parameters:

- Default SPDRoot reconstruction algorithms
- BBC incomplete configuration
- Event Generator: Pythia8
- $\sqrt{s} = 10 \text{ GeV}$
- 10 000 p-p collisions
- Minimum bias
- All generations
- No pseudorapidity region cuts
- Resolutions are calculated by:

$$\sigma = \sqrt{\frac{1}{n-1} \sum_{i=1}^n (r_{center} - r_{hit})^2}$$

Thank you for your attention!

BACK-UP SLIDES

