Cross-PWG Meeting of the MPD Collaboration
JINR, Dubna, Russia
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Λ reconstruction in MC Request 25 production

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PWG2

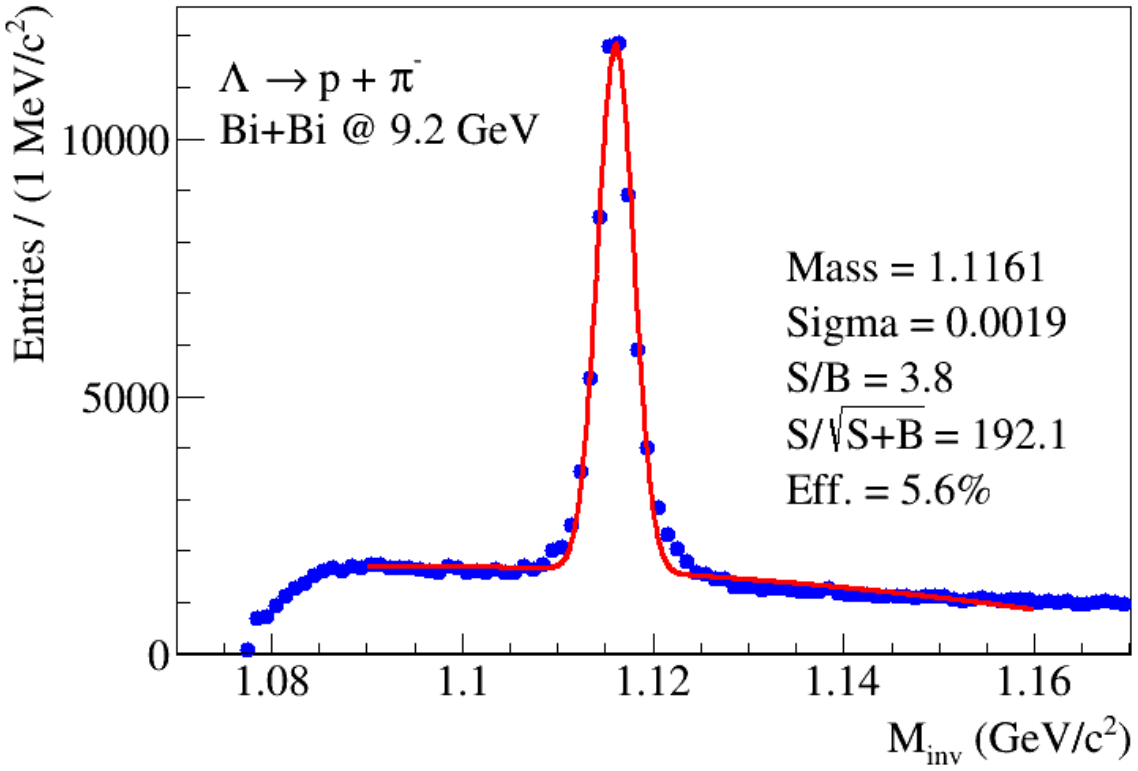
Data set in 25 production

- ✓ **Generator:** UrQMD, Min.bias, Bi+Bi @ 9.2 GeV, 20M
- ✓ **Reconstruction & Analysis:** hyperon wagon in the analysis train
- ✓ **PID:** A.Mudrokh's implementation, no PID for protons @ p_T >2.5 GeV/c
- ✓ **Selection:** $|y| < 0.5$, $Z_{PV} = \pm 130$ cm
- ✓ **p_T-bins:** 0.25-0.5-0.75-1 … 5
- ✓ **Centrality bins:** 0-10%, 10-20%, 20-40%, 40-60%, 60-80%

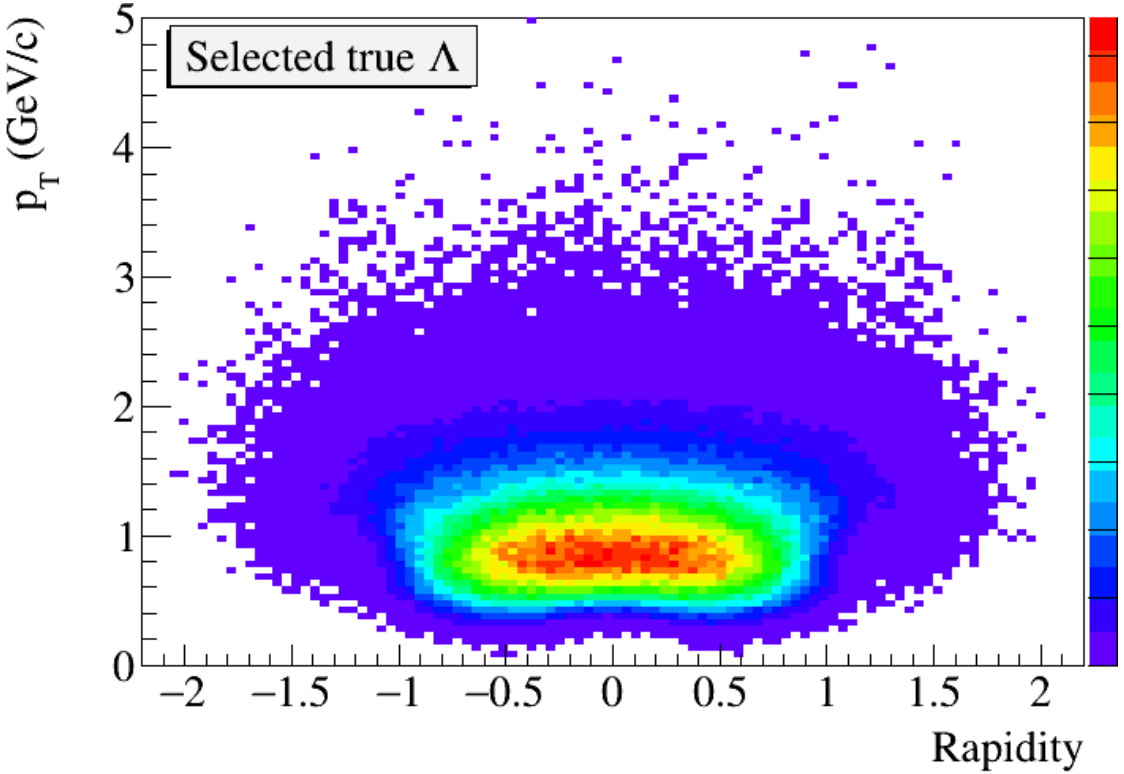
Lambda selection cuts

- ✓ l0.chi2s[][0] > 8.0 – normalized pion-to-primary vertex impact parameter
- ✓ l0.chi2s[][1] > 5.0 – normalized proton-to-primary vertex impact parameter
- ✓ l0.chi2h < 7.0 – chi2 of secondary vertex reconstruction
- ✓ l0.path > 2.0 – lambda decay path
- ✓ l0.angle < 0.08 – lambda momentum and primary-to-secondary vertex vector noncollinearity

pπ invariant mass and Λ phase space

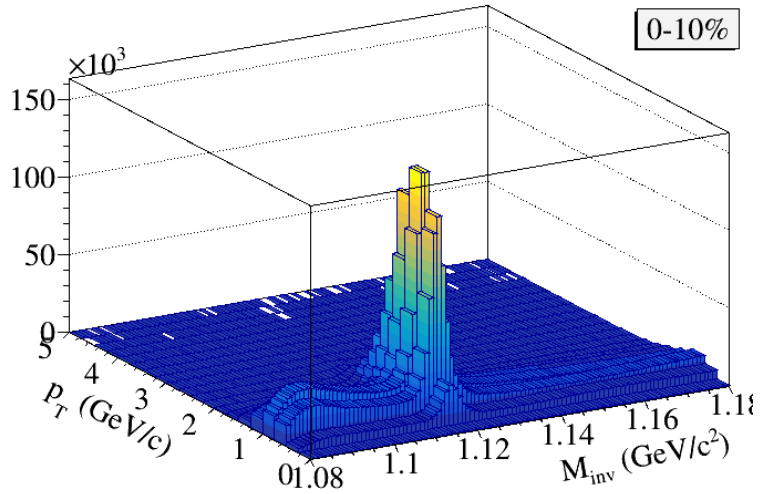


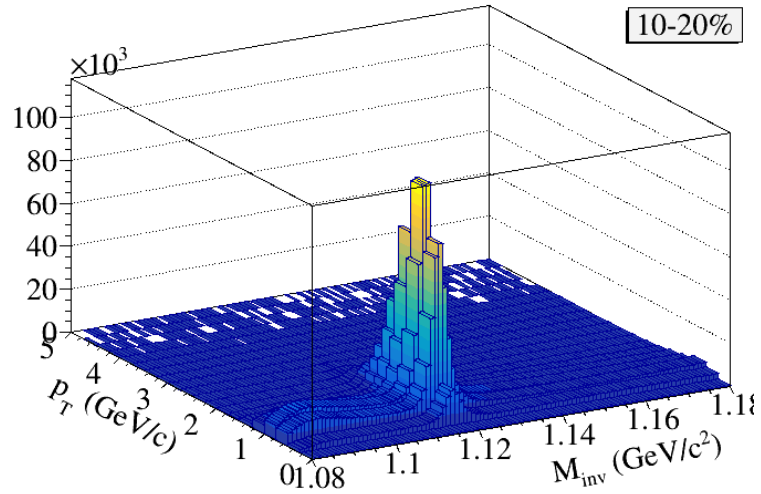
100k, all centralities

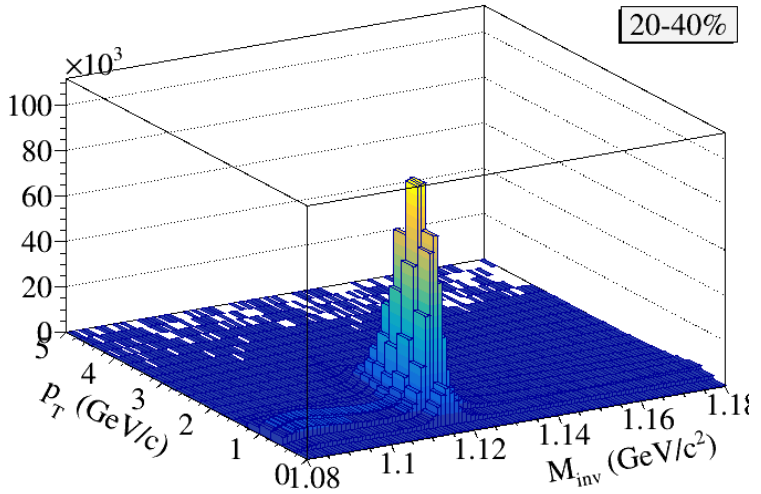


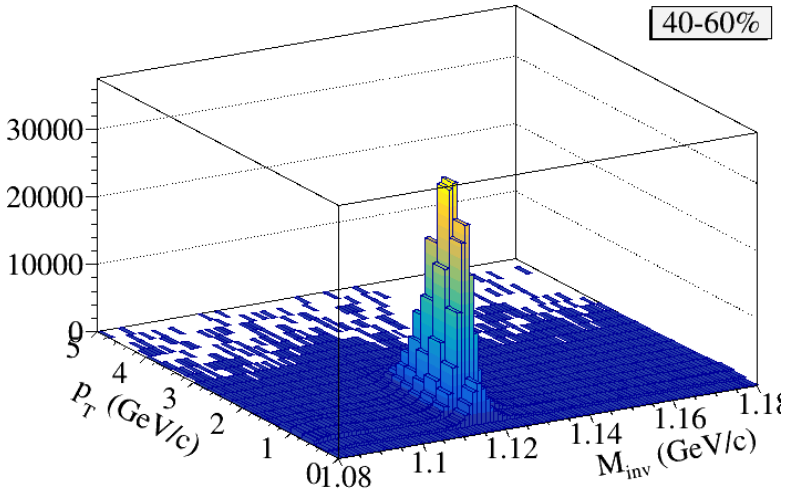
10M, all centralities

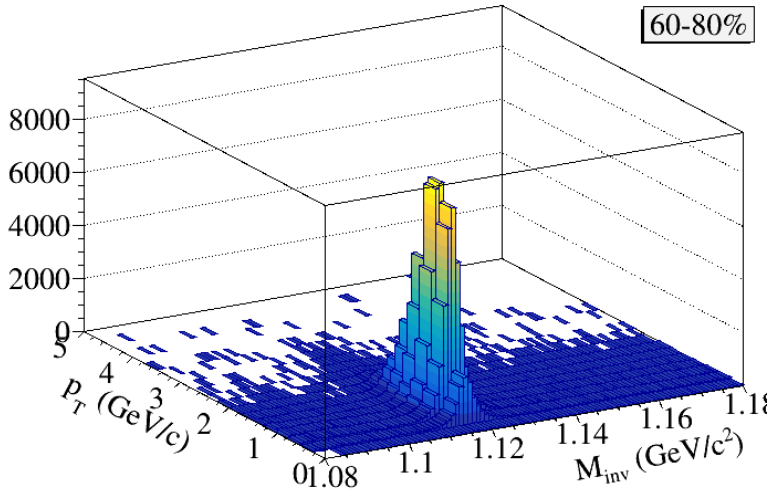
pπ invariant mass in pT-bins for different centralities



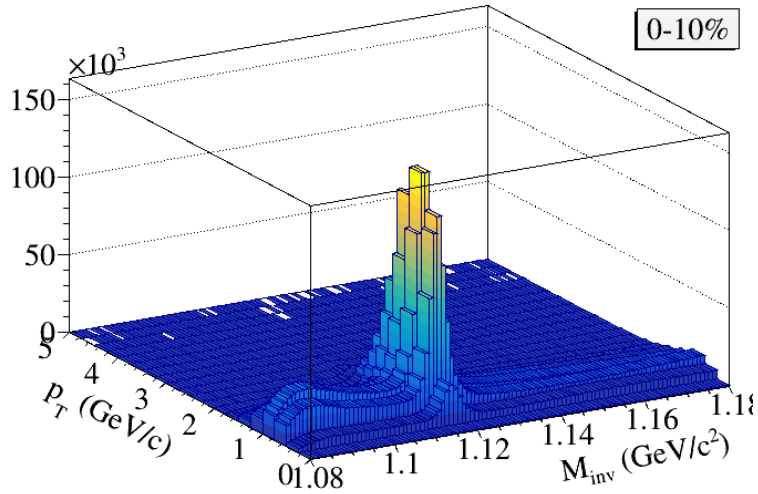


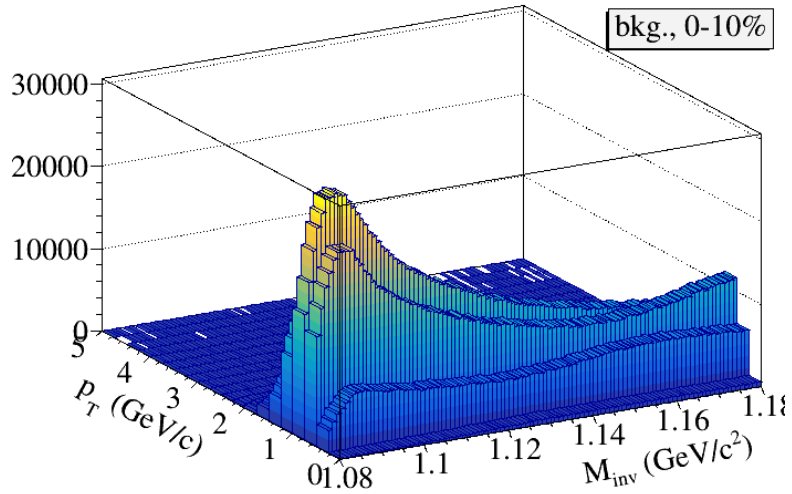


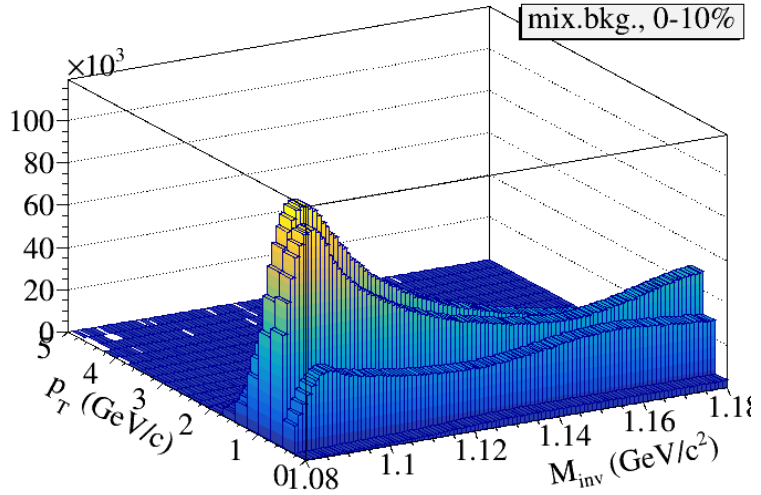


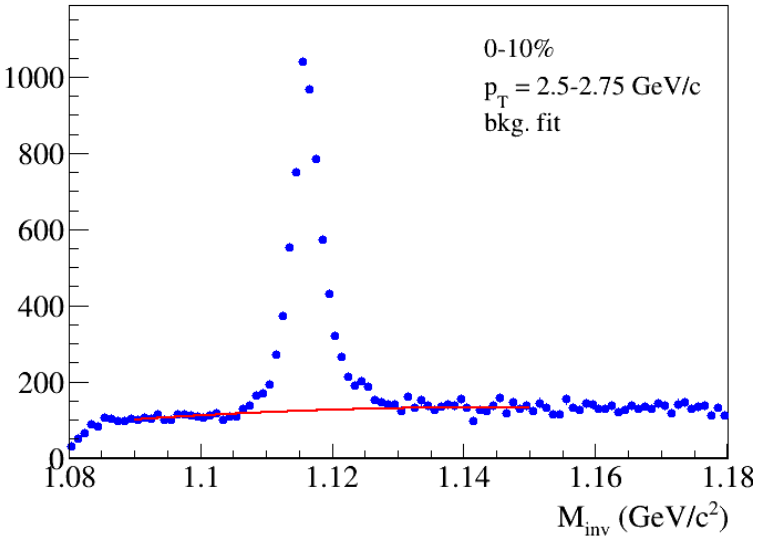


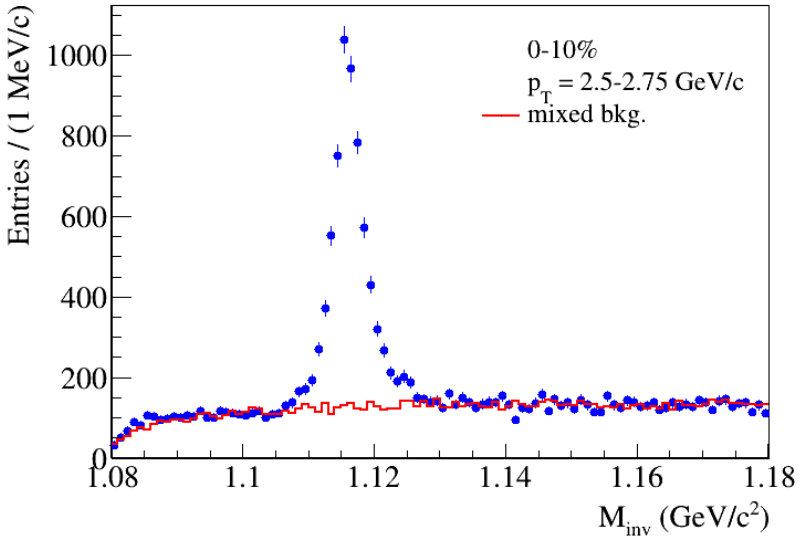
Background subtraction: fitted or mixed

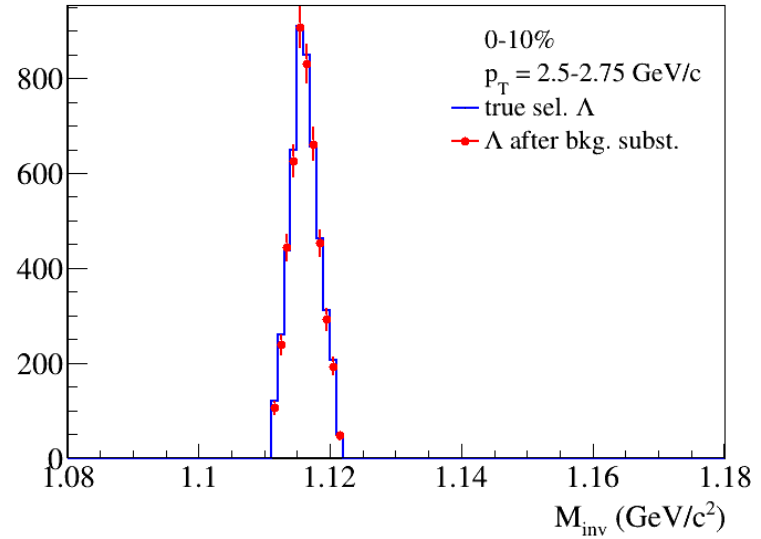




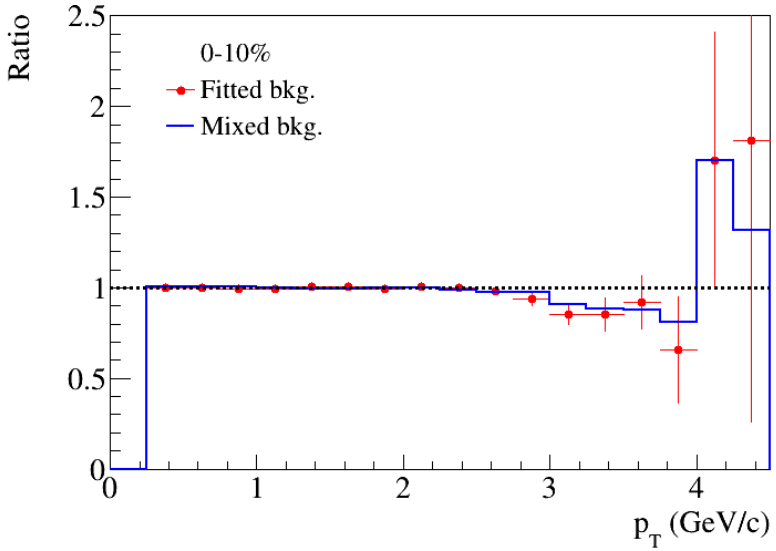


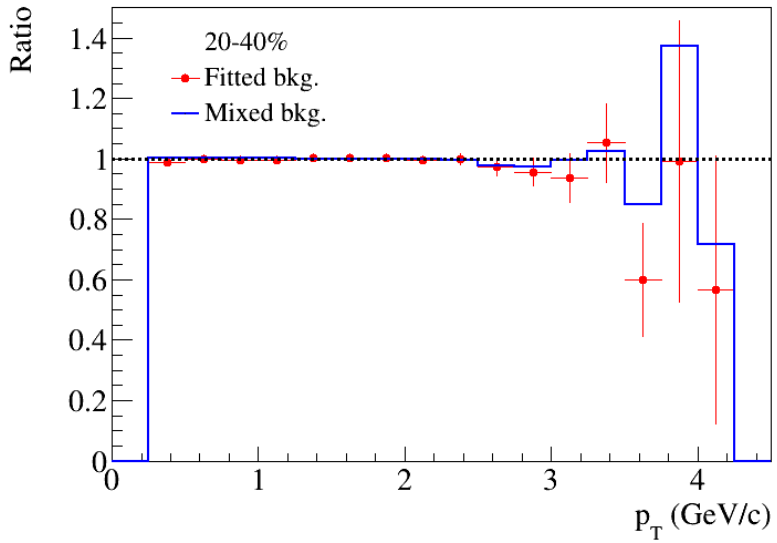


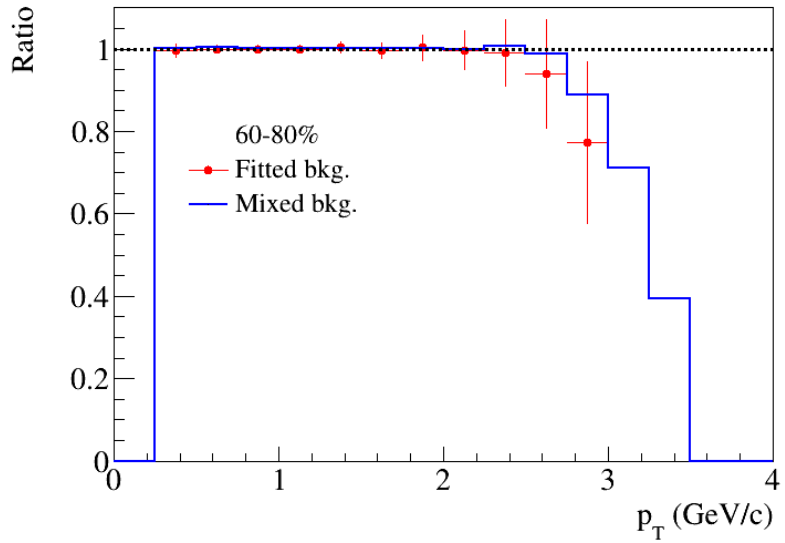


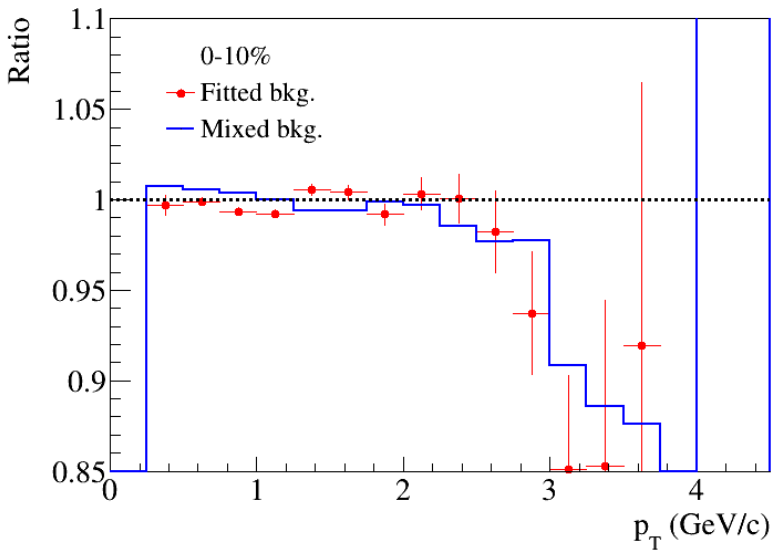


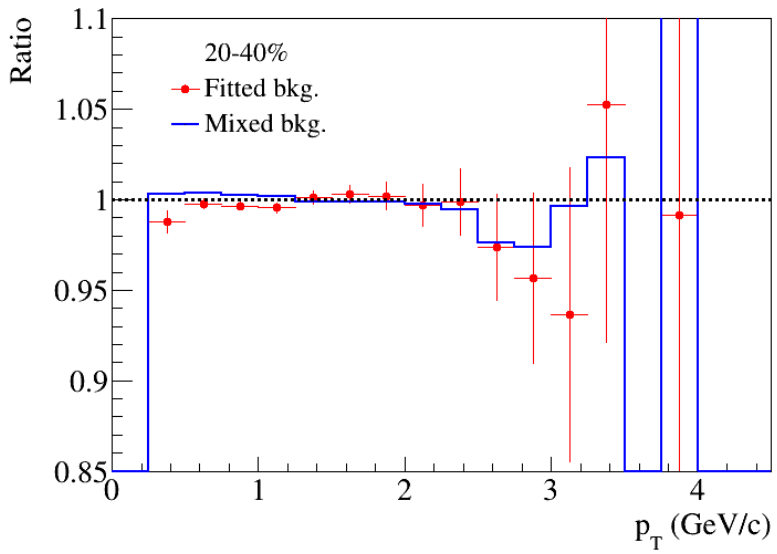
Extracted-to-true signal ratio: fitted vs mixed background

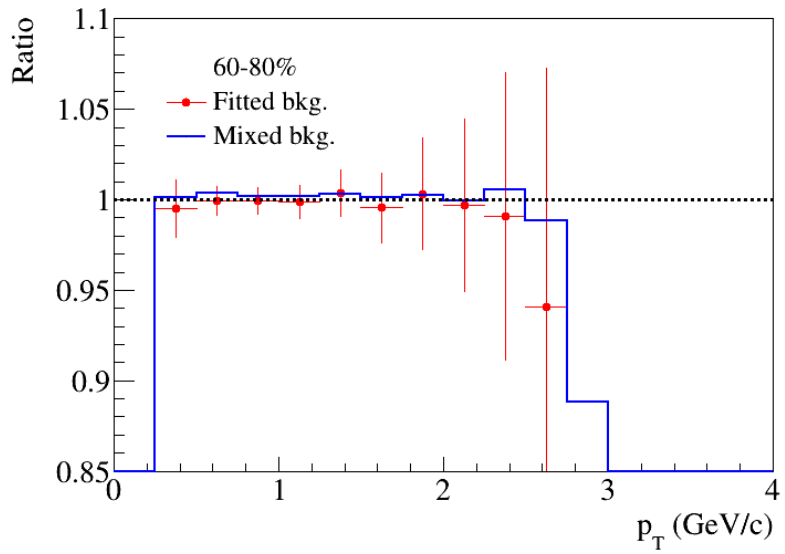




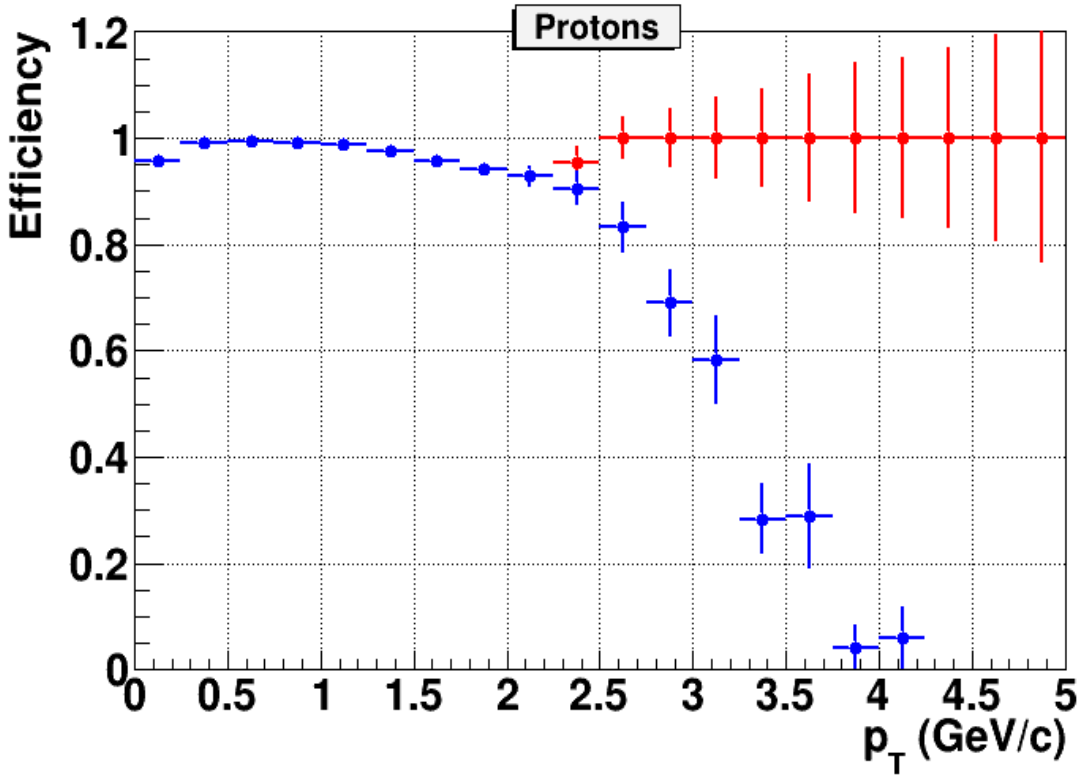


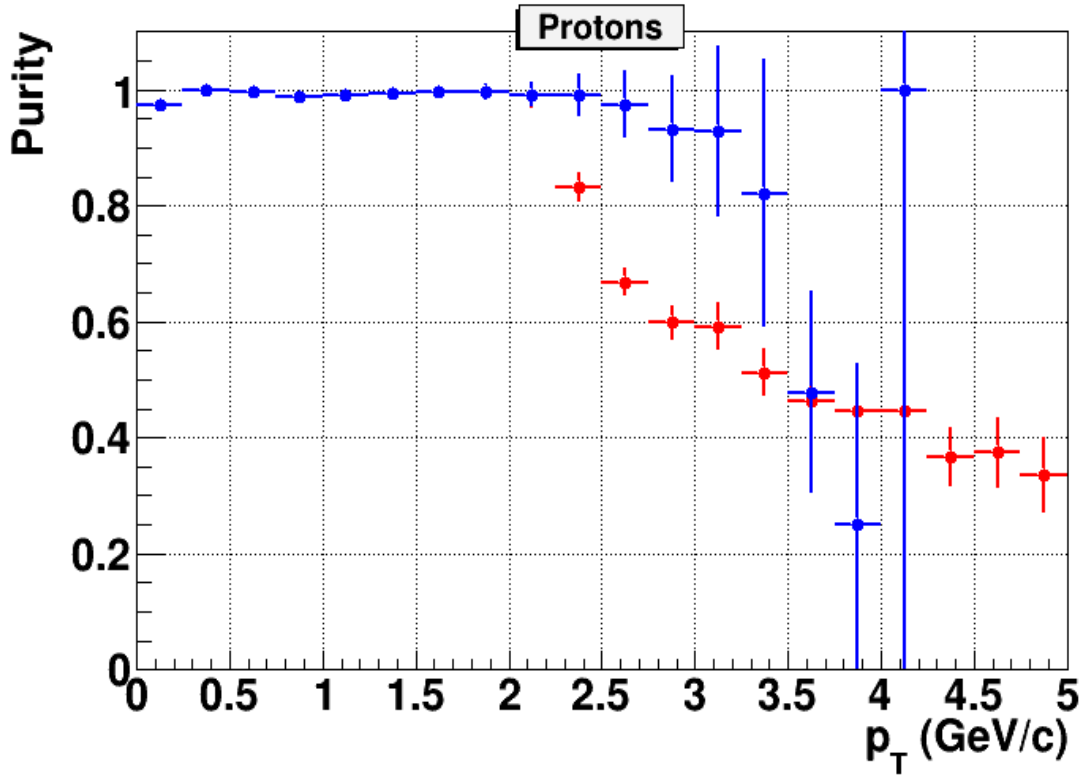






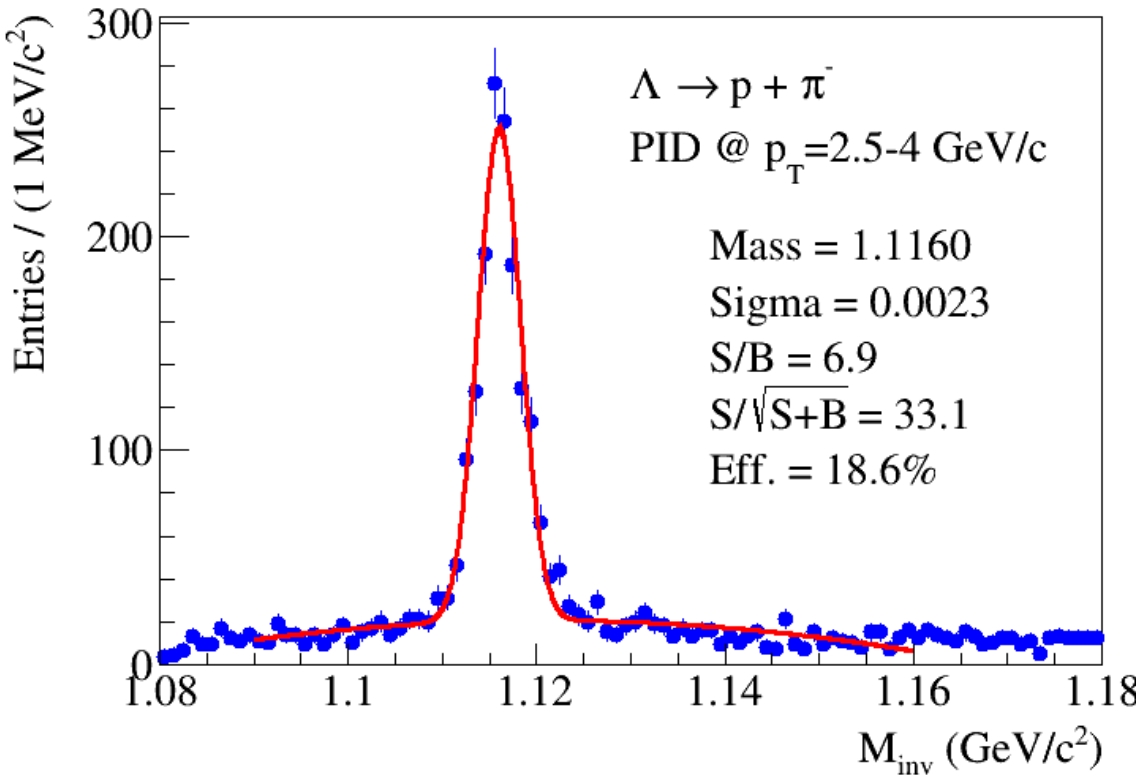
Proton identification

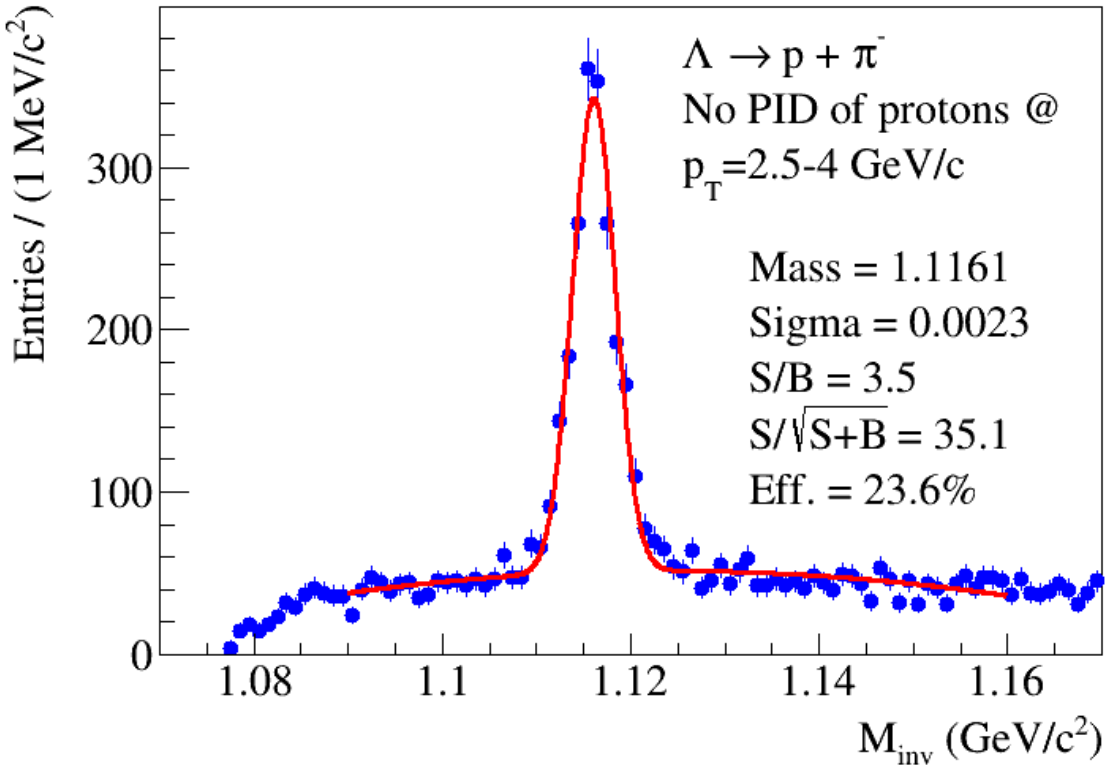




With and without protons PID @ pT>2.5 GeV/c, Bi+Bi, 2M, all centralities, |η|<0.5

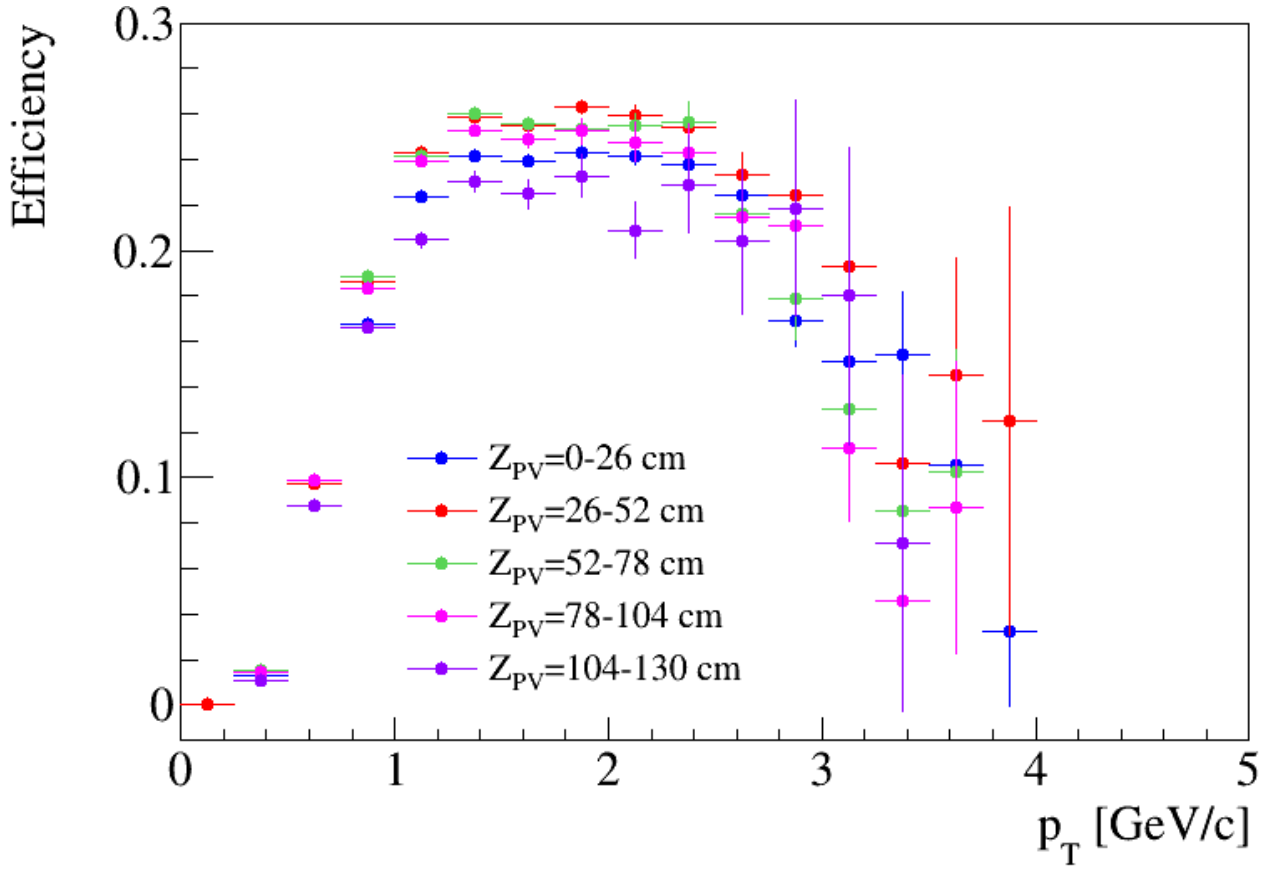
Λ selection at large pT

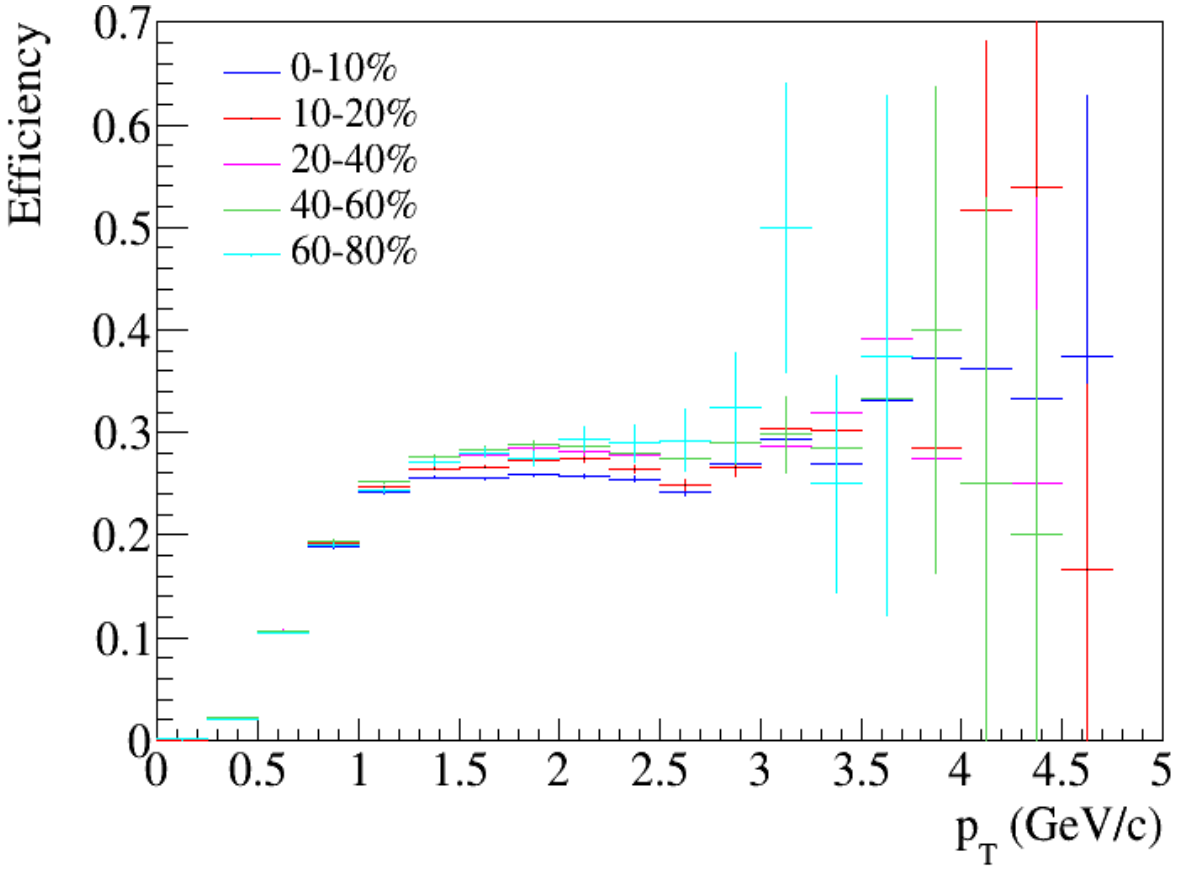




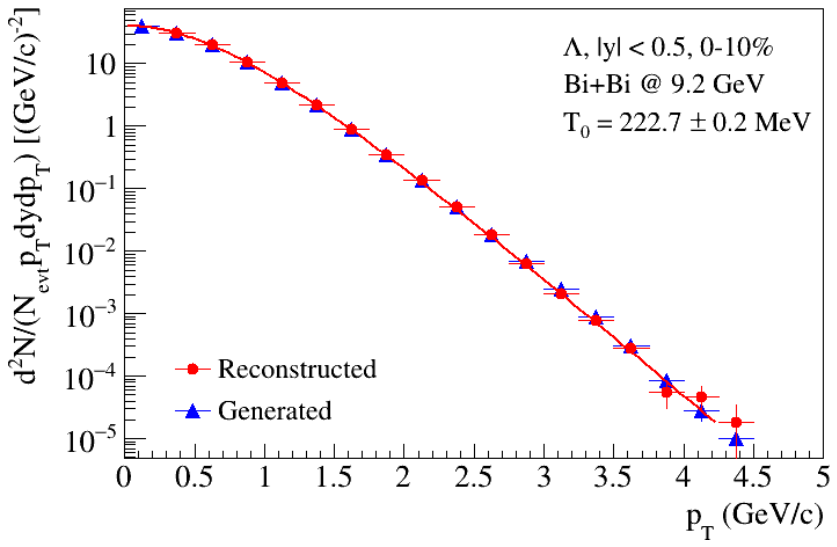
With and without protons PID @ pT>2.5 GeV/c, Bi+Bi, 2M, all centralities, |η|<0.5

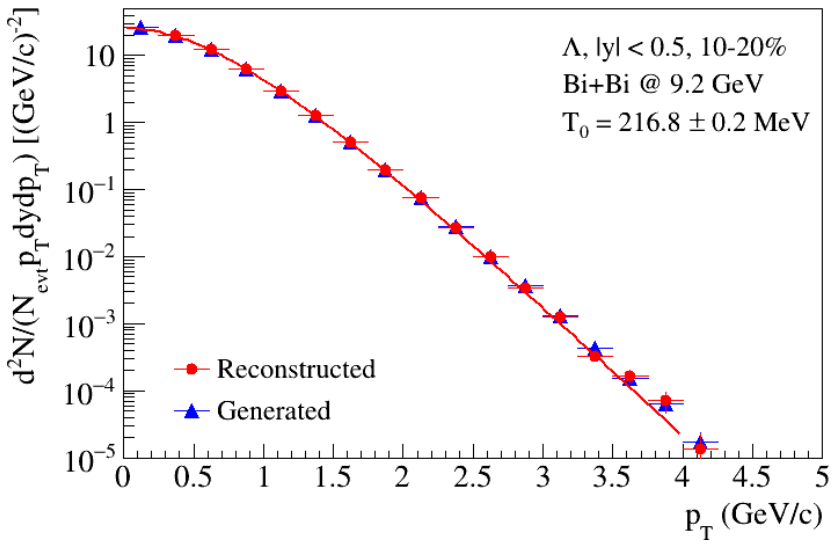
Lambda efficiency

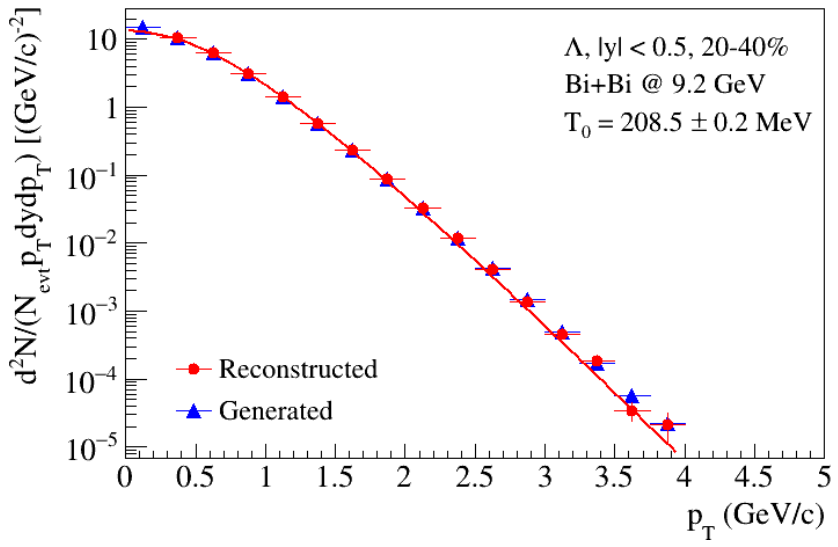


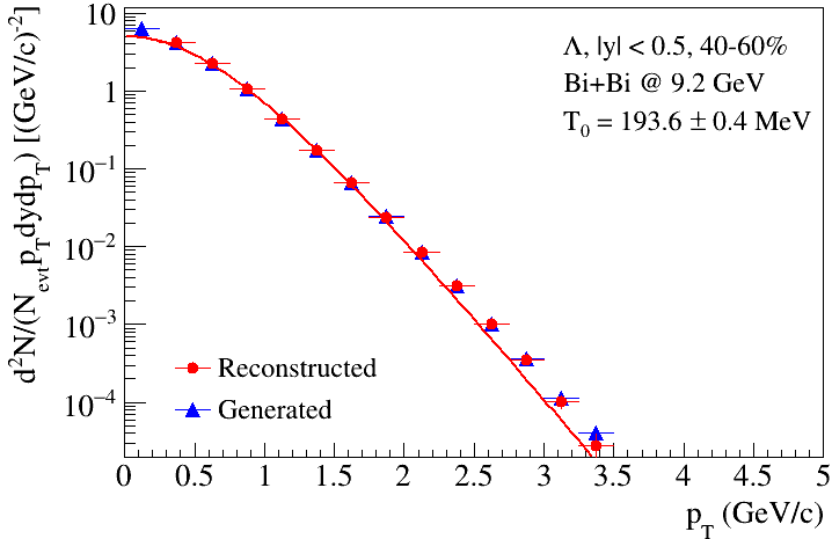


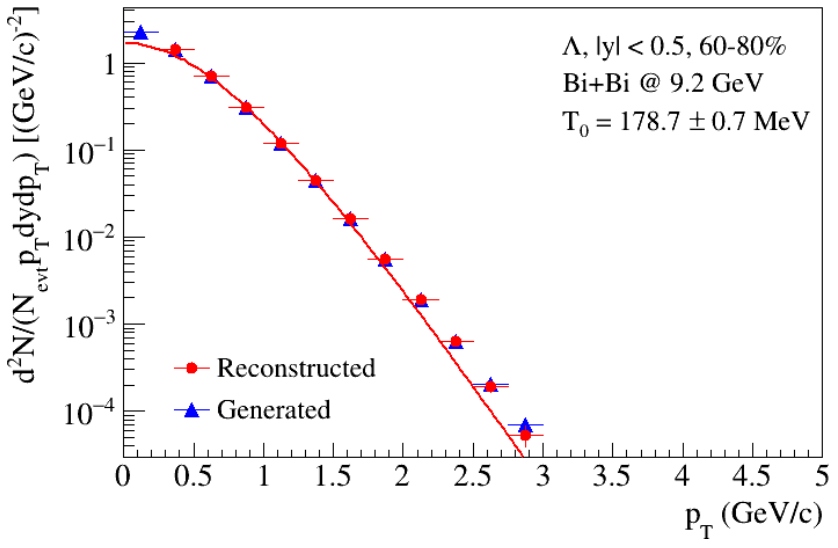
Invariant p_T -spectra of Λ in centrality bins

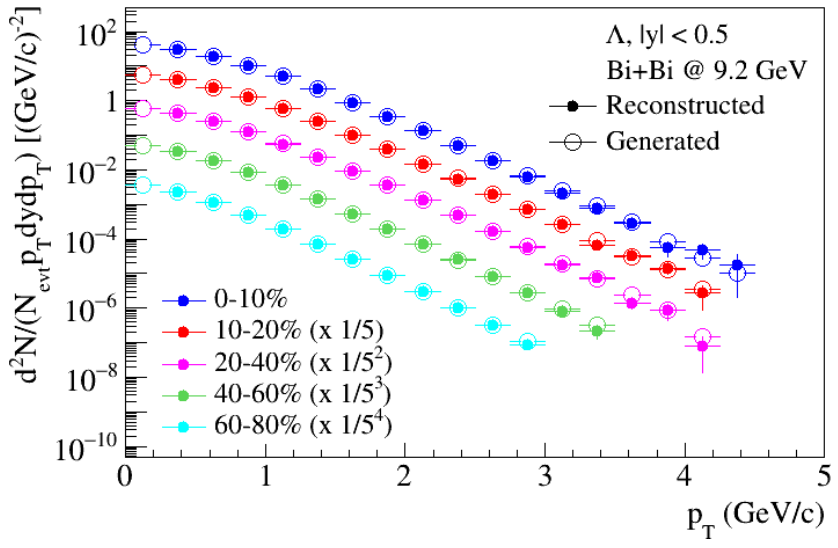












Summary and Plans

- ✓ **Lambda hyperon analysis seems to be quite mature**
- ✓ **Other hyperons are on the way to their wagon(s)**