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Data Samples

Lambda reconstruction efficiency study:

- ep Pythia simulation 10x100
- Event filter applied to keep only events with Λ_c that decay into a pion, proton and kaon
- Full detector simulation
- Only primary vertex included/ no explicit ٠ secondary vertex reconstruction
- One Λ_c found every 70 000 events
- 100 000 Λ_c are produced for a total of 6 943 676 080 events in about 2 weeks
- Under the supervision of Dr. Olga Evdokimov



の方法になったので

HOLD HAR BARREN

Invariant mass reconstruction



- All p, π ,K triplets with total charge +/- 1 are added to obtain the Λ_c mother
- Reco Λ_c consist of mothers with a mass within 0.086 from the Λ_c invariant mass (2.286)
- Protons are not identified correctly and are assigned a pdg of 0 instead of 2212

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这些关键的实际的现在分词

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 Λ_{c} reconstruction efficiency



- All p, π ,K triplets with total charge +/- 1 are added to obtain the Λ_c mother
- Reco Λ_c consist of mothers with a mass within 0.086 from the Λ_c invariant mass (2.286)
- Protons are not identified correctly and are assigned a pdg of 0 instead of 2212

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Λ_c reconstruction efficiency





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Secondary track reconstruction efficiency



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Secondary track reconstruction efficiency



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Secondary track reconstruction efficiency



Manual Anna Anna

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Charged particles reconstruction





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Fraction of particles from Λ_*c* daughters



STATISTICS IN CONTRACTOR

Manual Anna Anna

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Fraction of particles from Λ_c daughters





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And Antonio America





Secondary track reconstruction efficiency From other EIC simulations



- Efficiency of p, π, K vs p_T
- Reference files: \EIC\EPIC\RECO\23.12.0\epic_craterlake\DIS\NC\18x275\minQ2=100\ pythia8NCDIS_18x275_minQ2=100_beamEffects_xAngle=-0.025_hiDiv_1.0049.eicrecon.tree.edm4eic

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Secondary track reconstruction efficiency From other EIC simulations ³899886998 dN/dp Ratio 0.5 P_T (GeV/c)

- Efficiency of *p* for $|\eta| < 2$
- Reference files: \EIC\EPIC\RECO\23.12.0\epic_craterlake\DIS\NC\18x275\minQ2=100\ pythia8NCDIS_18x275_minQ2=100_beamEffects_xAngle=-0.025_hiDiv_1.0049.eicrecon.tree.edm4eic

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Ratio

0.08 0.06 0.04 0.02

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// Pythia Configuration File

// Beam Settings
Beams:idA = 2212
Beams:idB = 11
Beams:frameType = 2
Beams:eA = 100
Beams:eB = 10

// Process Settings
WeakBosonExchange:ff2ff(t:gmZ) = on
SpaceShower:dipoleRecoil = on
PDF:lepton = off

// Phase Space Settings
PhaseSpace:Q2min = 1

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