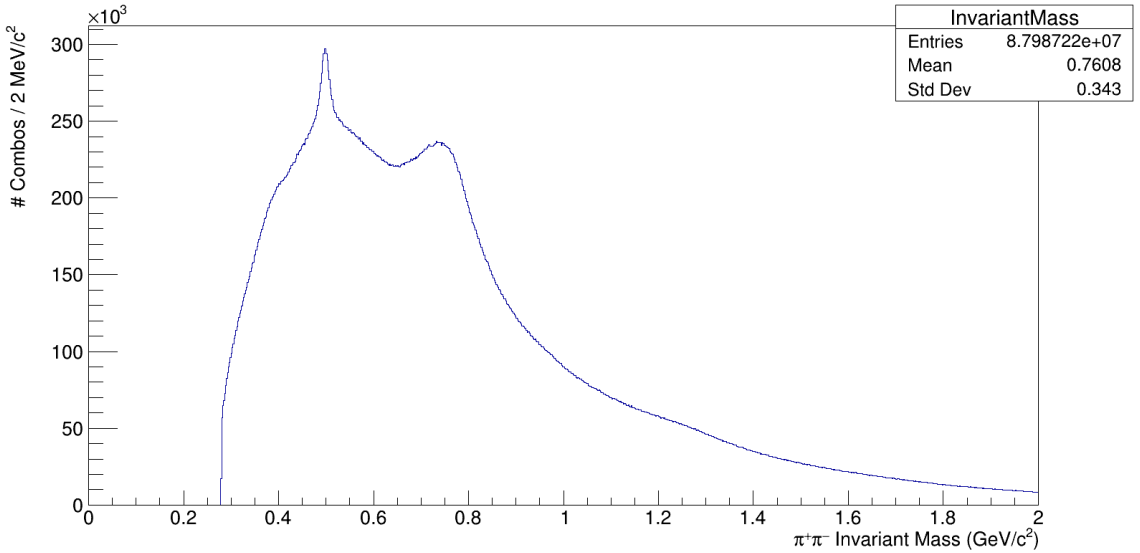
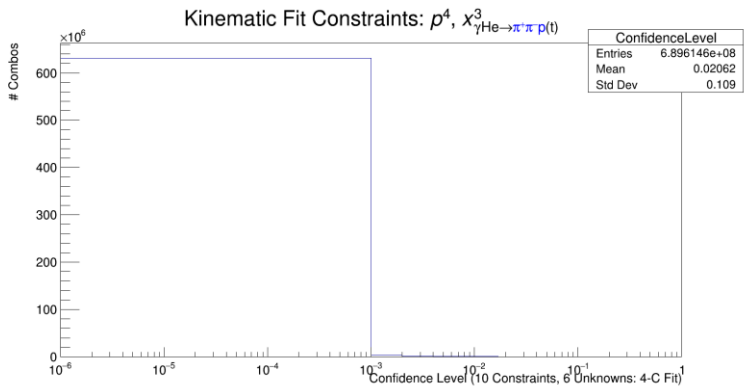
Prelim Analysis for Rho0 channel in Helium

- ReactionFilter plugin is used to find the events for Rho0 channels to make Analysis Trees.
- $\gamma + He4 \longrightarrow \pi^+ + \pi^- + p + (tritium)$
- Reaction : 1_47__8_9_14_m46
- Flags : F4_B4_T2_S5
- F4 = 4Momentum and Vertex constraint KinFit
- B4 = includes beam photon from 4 beam bunches on either side of prompt peak(B1default)
- T2 = Exclude events with more than 2 additional tracks (T3 default)
- S5 = Exclude events with more than 5 additional shower (999 default)
- $\gamma + He4 \longrightarrow \pi^+ + \pi^- + p + (unknown)$
- Reaction : 1_47__8_9_14_m0
- Flags : F4_B4_T2_S5
- Dselector is used for analyzing of “Analysis Trees” produced from Reaction Filter Plugin.

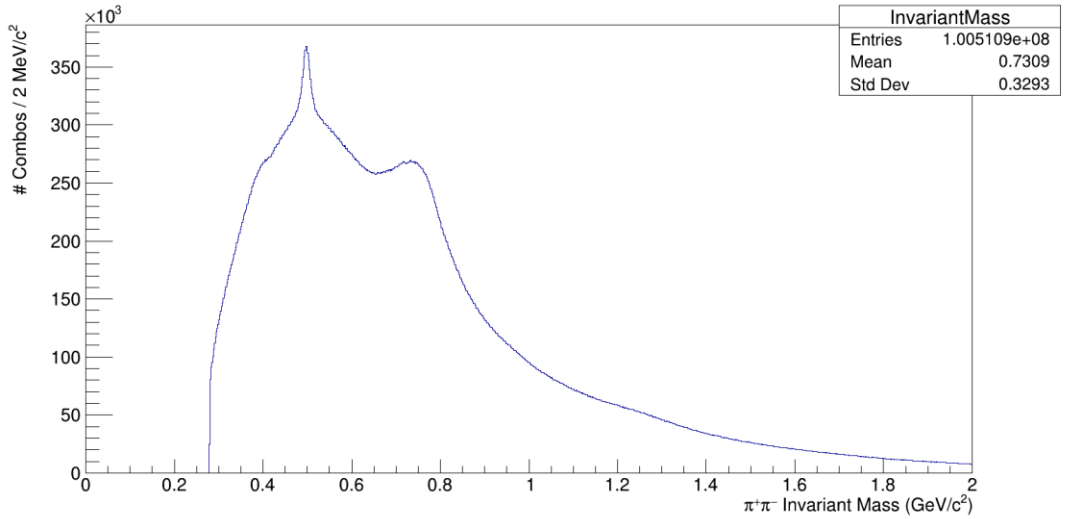
Invariant Mass && CL before any cuts:

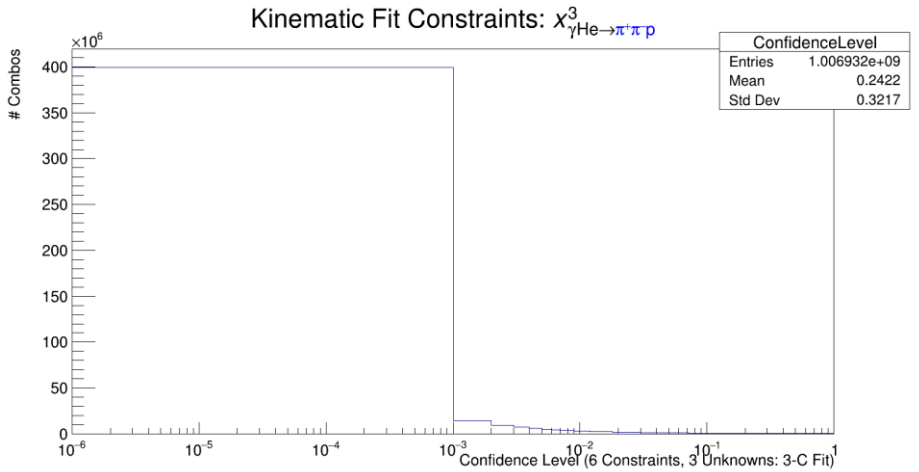
Missing Tritium





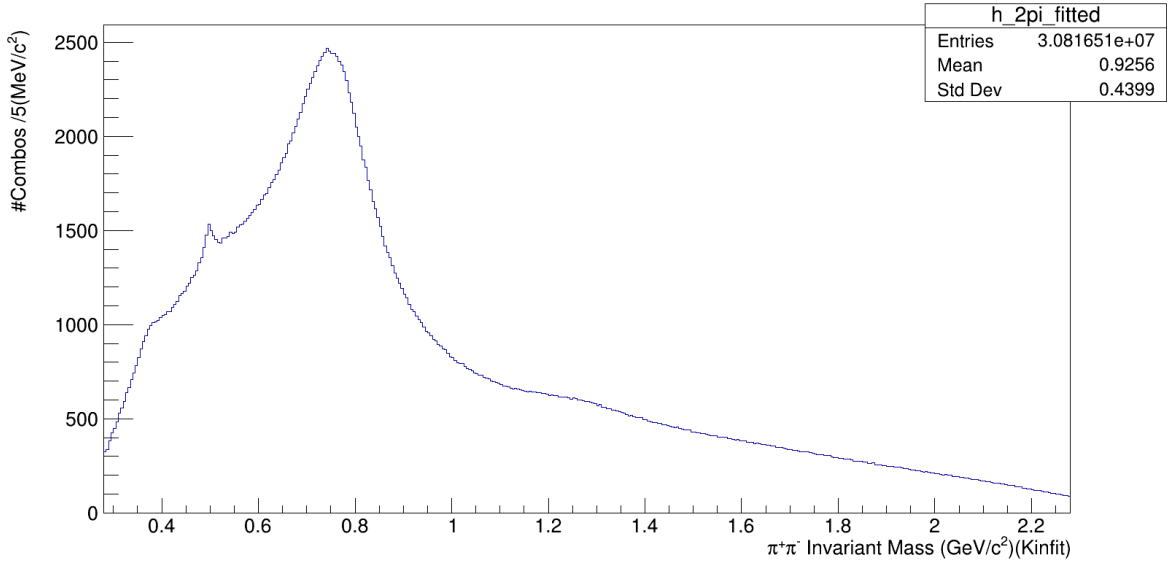
Missing Unknown





Invariant Mass After Cut on CL > 0.001 and Beam Energy > 6.5(helium)

Missing Tritium



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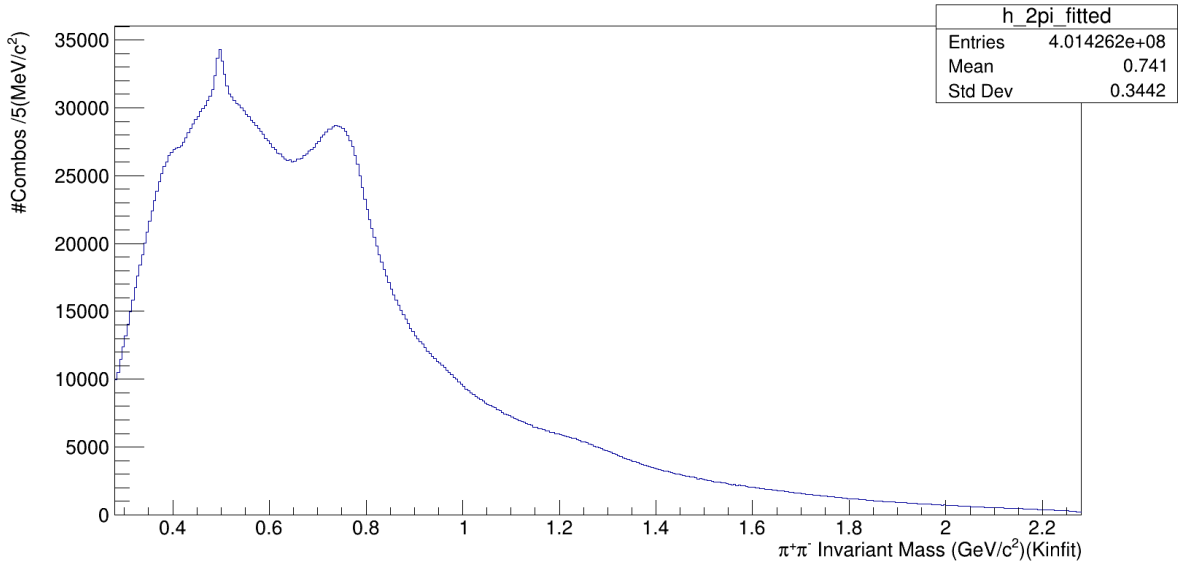
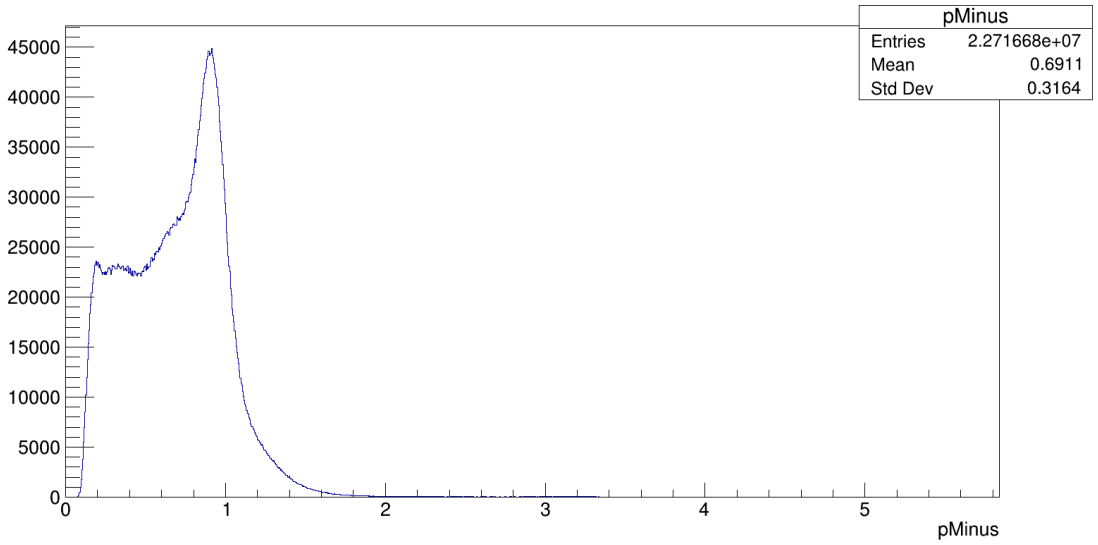


pMinus after Cut on CL > 0.001 and Beam Energy > 6.5

Missing Tritium



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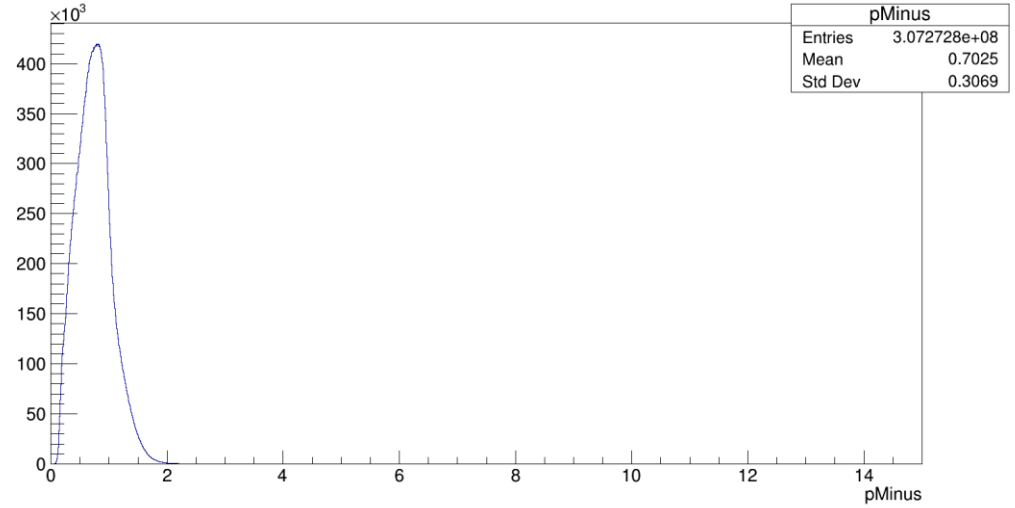
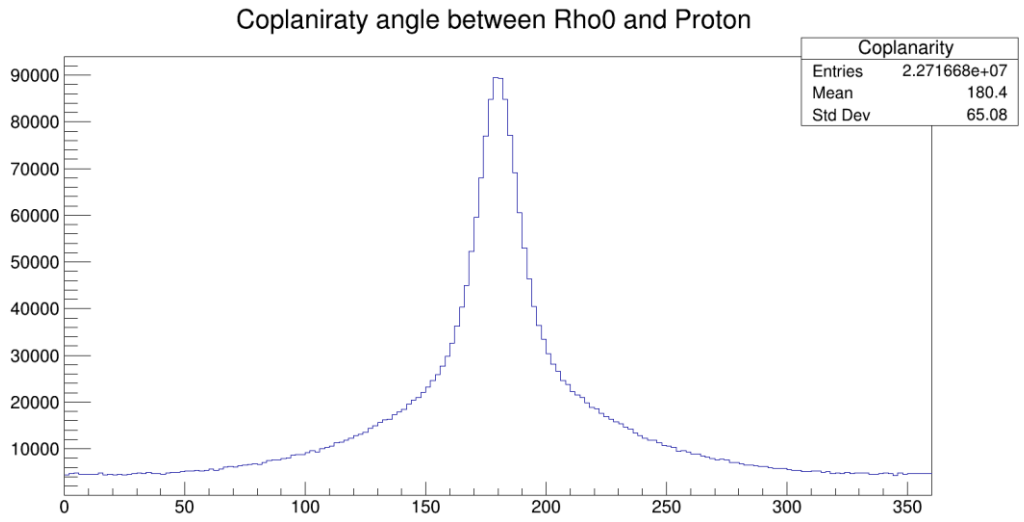


pMinus = (E.rho + E.proton) –(Pz.rho + Pz.proton)

Coplanarity After Cut on CL > 0.001 and Beam Energy > 6.5

Missing Tritium



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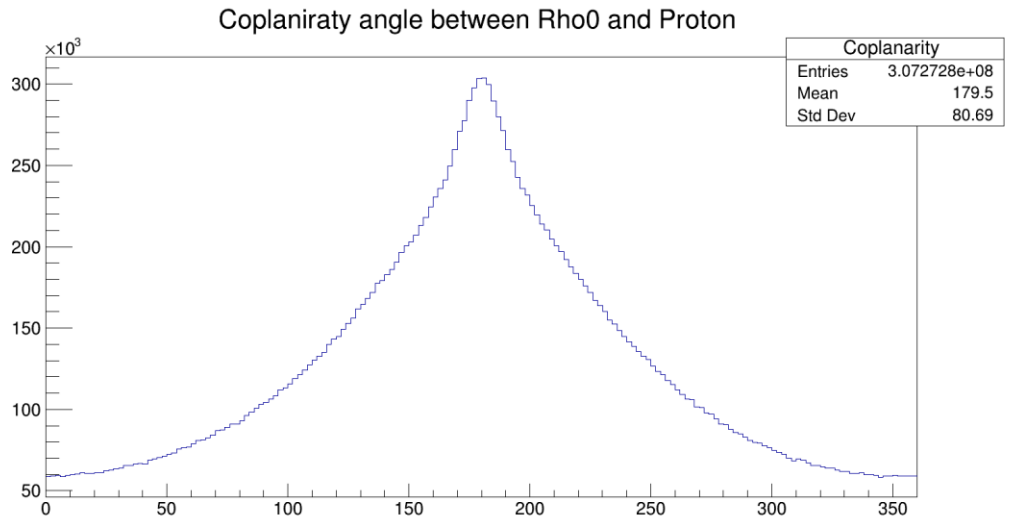
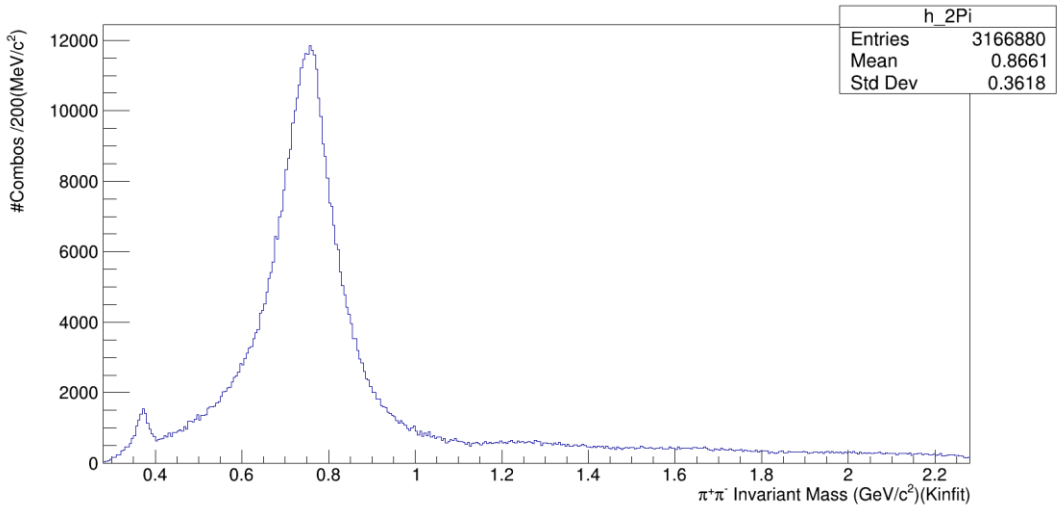


Invariant Mass of Rho0 in (helium) (includes pMinus cut)

Missing Tritium



C.L > 0.001

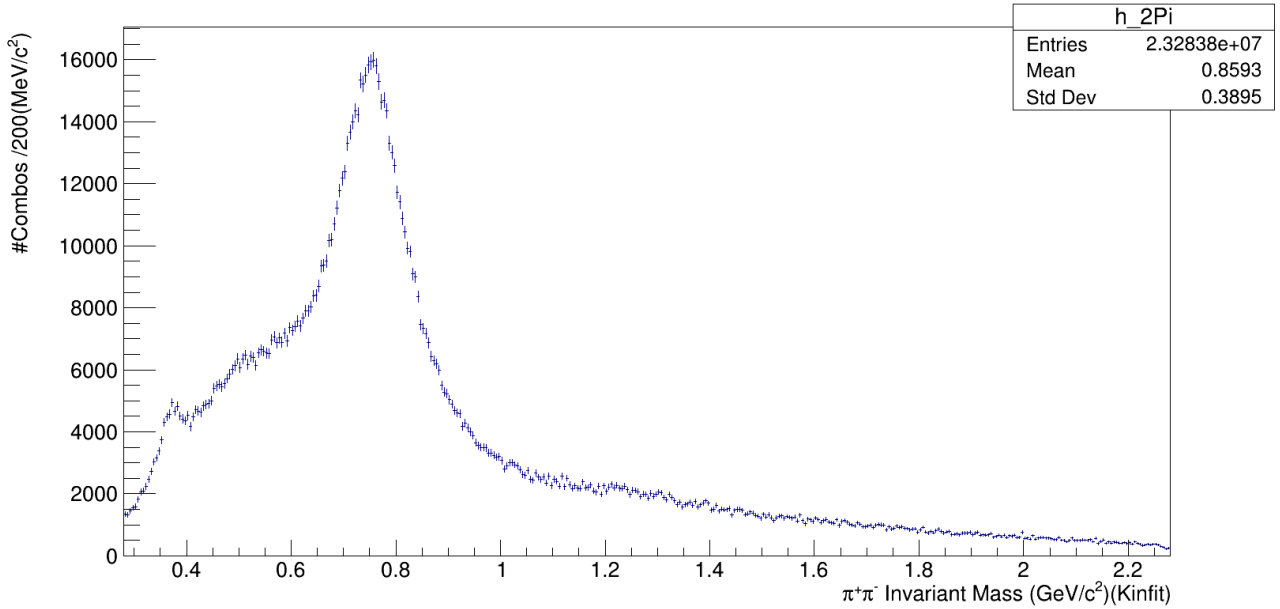
BeamEnergy > 6.5 GeV

52 cm < Zvertex < 78 cm

Coplanarity between Rho0 and Proton(165,195)

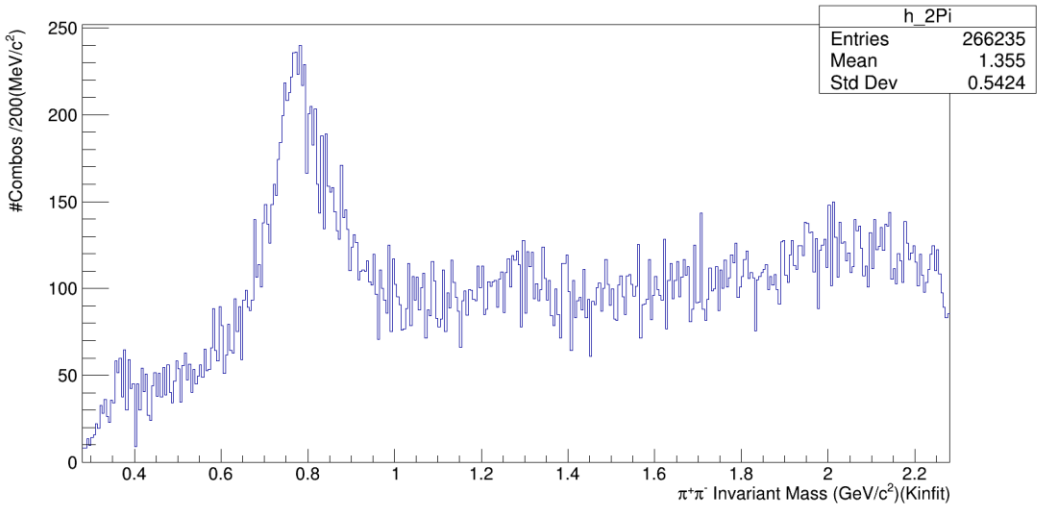
PipProt Invariant Mass > 1.3 && PimProt Invariant Mass >1.2

Missing Unknown



Invariant Mass of Rho After applying cut on |t|>1,||u| > 1(helium) and pMinus cut.

Missing Tritium



C.L > 0.001

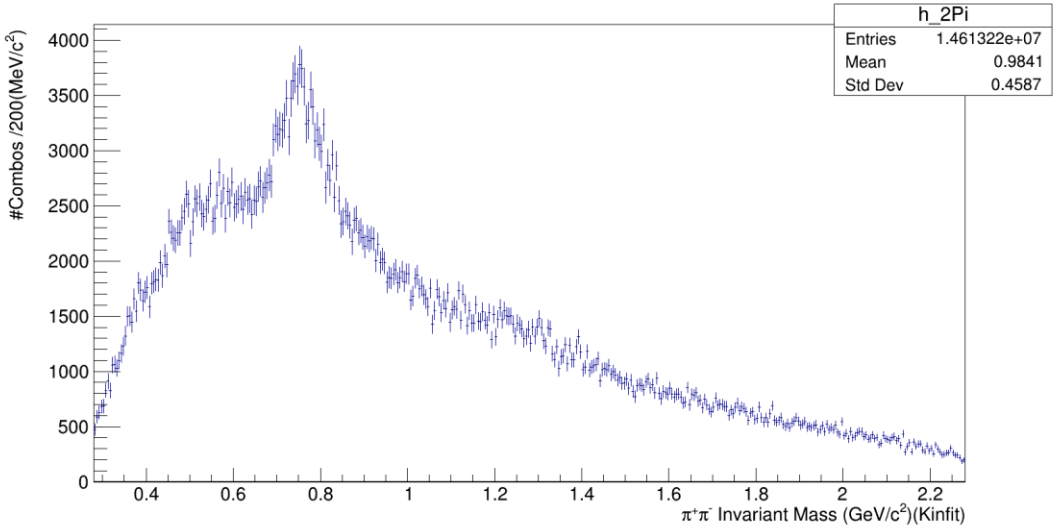
BeamEnergy > 6.5 GeV

52 cm < Zvertex < 78 cm

Coplanarity between Rho0 and Proton(165,195)

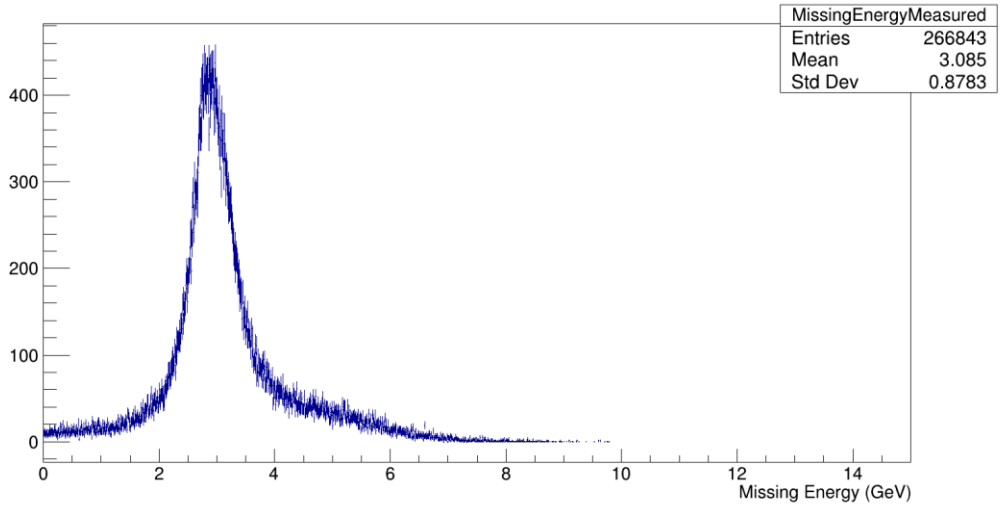
PipProt Invariant Mass > 1.3 && PimProt Invariant Mass >1.2

Missing Unknown



Missing Energy of Rho After applying cut on |t|>1,||u| > 1,pMinus

Missing Tritium



C.L > 0.001

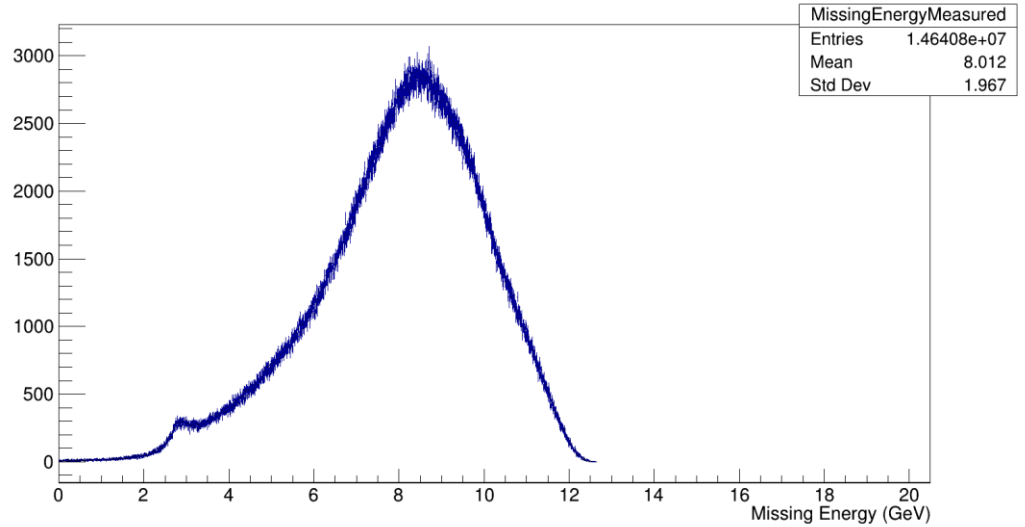
BeamEnergy > 6.5 GeV

52 cm < Zvertex < 78 cm

Coplanarity between Rho0 and Proton(165,195)

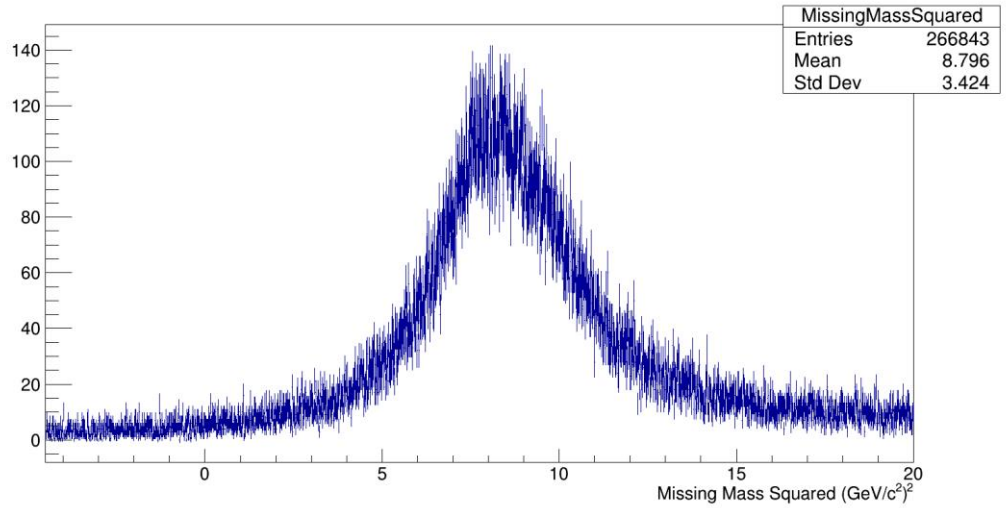
PipProt Invariant Mass > 1.3 && PimProt Invariant Mass >1.2

Missing Unknown



MM2 of Rho After applying cut on |t|>1,||u| > 1(helium)

Missing Tritium



C.L > 0.001

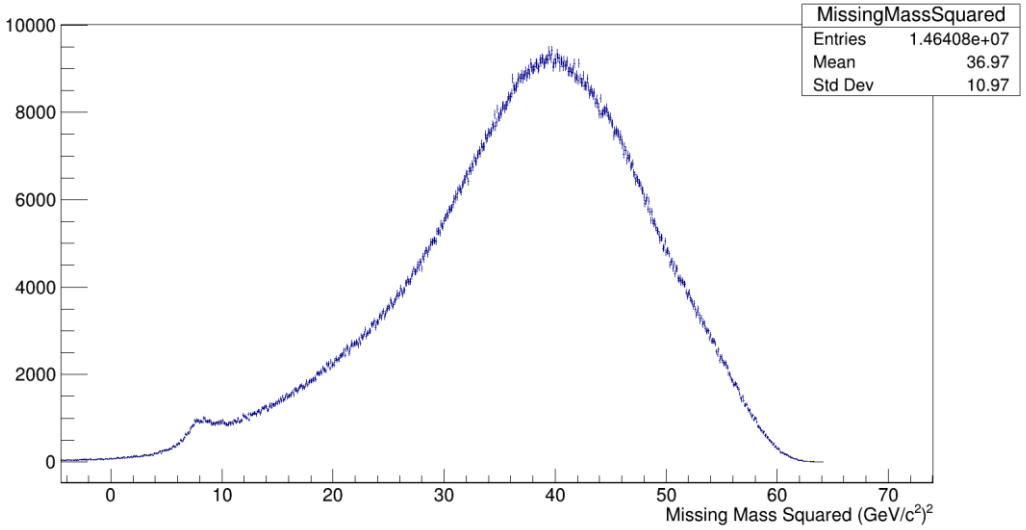
BeamEnergy > 6.5 GeV

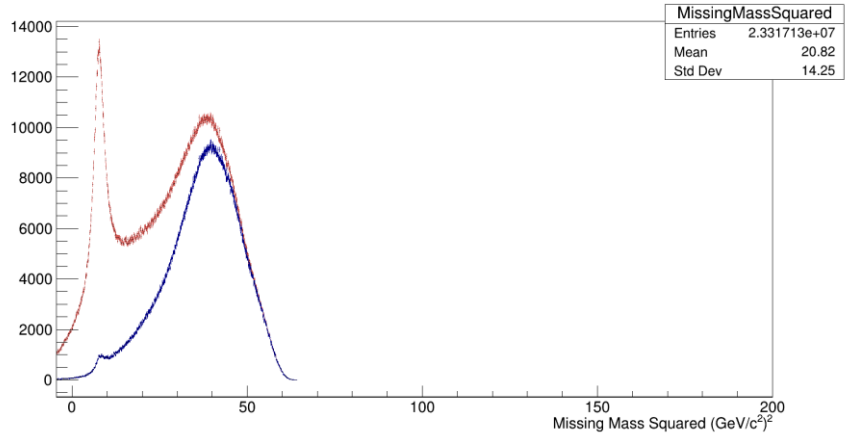
52 cm < Zvertex < 78 cm

Coplanarity between Rho0 and Proton(165,195)

PipProt Invariant Mass > 1.3 && PimProt Invariant Mass >1.2

Missing Unknown





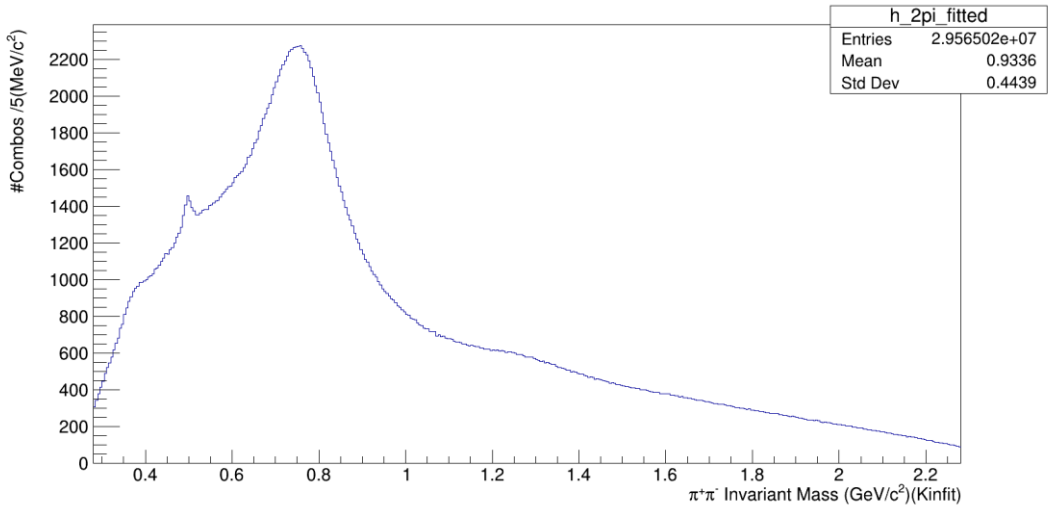
Before and after |t|, |u| cut

Prelim Analysis for Rho0 channel in Carbon12

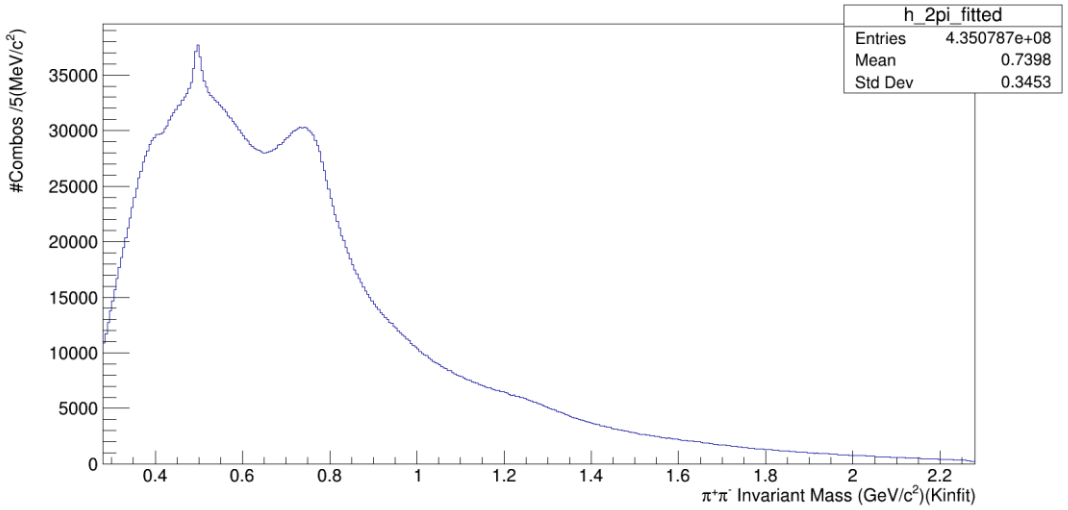
- ReactionFilter plugin is used to find the events for Rho0 channels to make Analysis Trees.
- $\gamma + C12 \longrightarrow \pi^+ + \pi^- + p + (Boron11)$
- Reaction : 1_67__8_9_14_m66
- Flags : F4_B4_T2_S5
- F4 = 4Momentum and Vertex constraint KinFit
- B4 = includes beam photon from 4 beam bunches on either side of prompt peak(B1default)
- T2 = Exclude events with more than 2 additional tracks (T3 default)
- S5 = Exclude events with more than 5 additional shower (999 default)
- $\gamma + C12 \longrightarrow \pi^+ + \pi^- + p + (unknown)$
- Reaction : 1_67__8_9_14_m0
- Flags : F4_B4_T2_S5
- Dselector is used for analyzing of “Analysis Trees” produced from Reaction Filter Plugin.

Invariant mass of Rho0 (carbon) :Cut on CL > 0.001 and Beam Energy > 6.5

Missing Boron

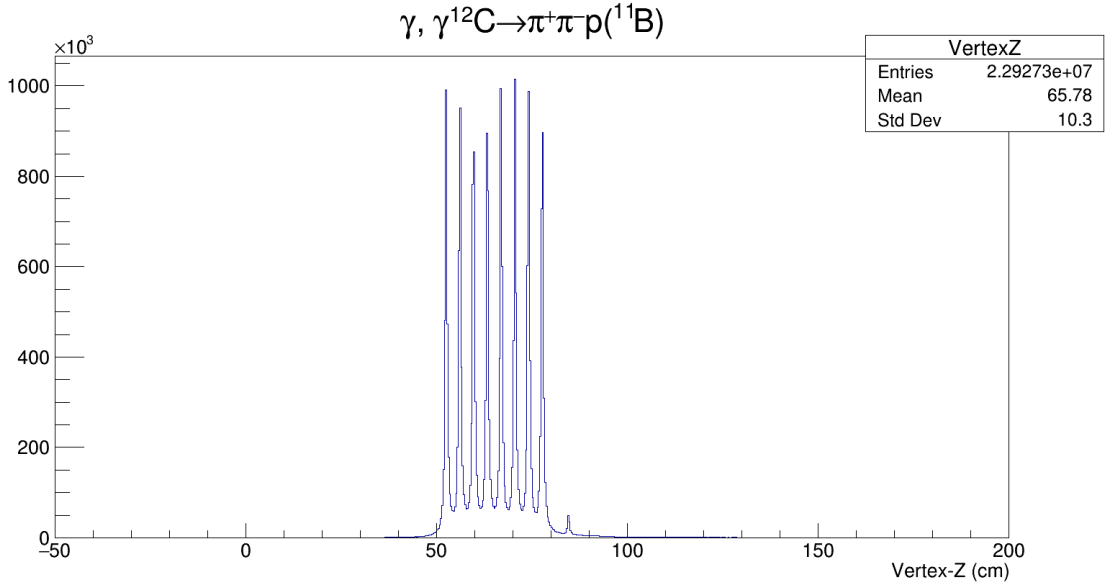


Missing Unknown



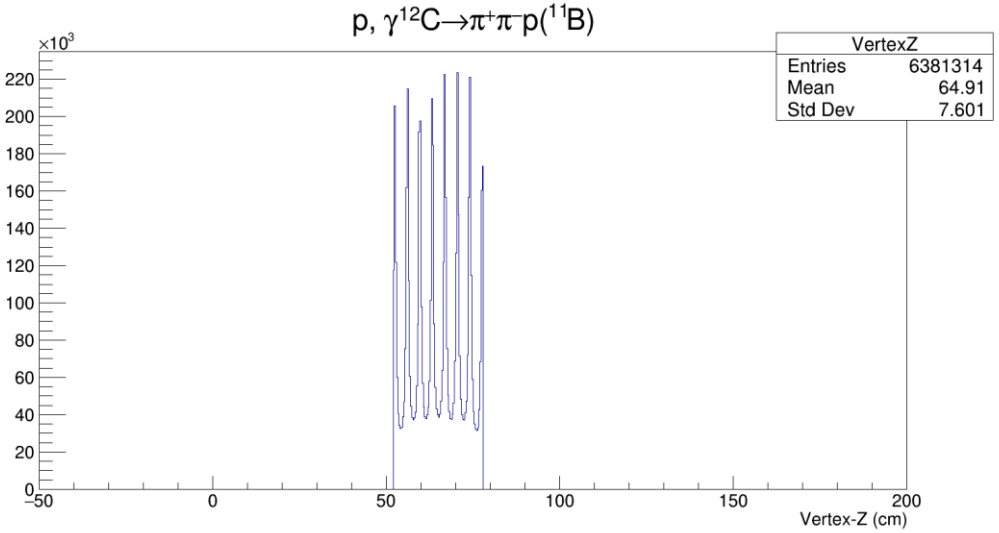
Vertex of Rho0 (carbon) :Cut on CL > 0.001 and Beam Energy > 6.5

Missing Boron



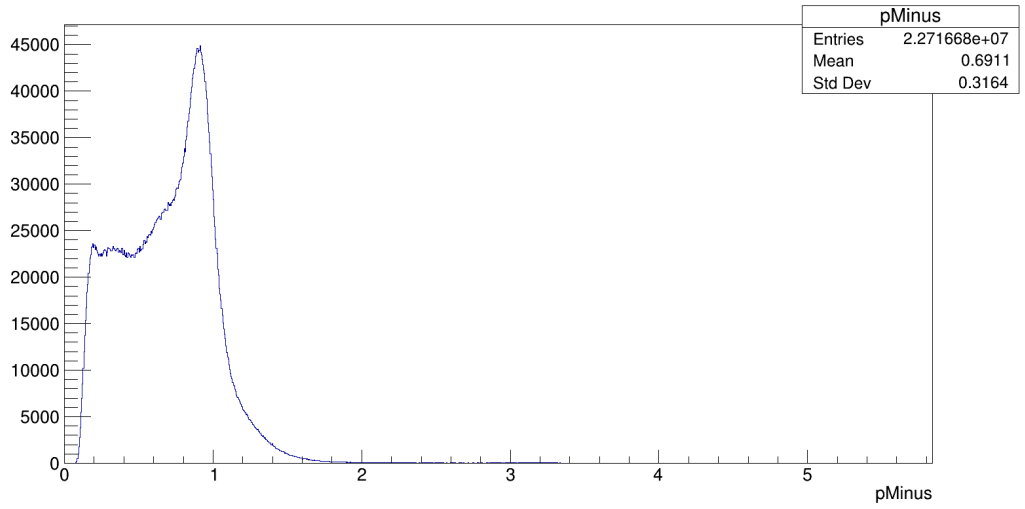
Cut on VertexZ of Beam ,and Measured Proton.

Missing Boron



pMinus of Rho0 (carbon)

Missing Boron

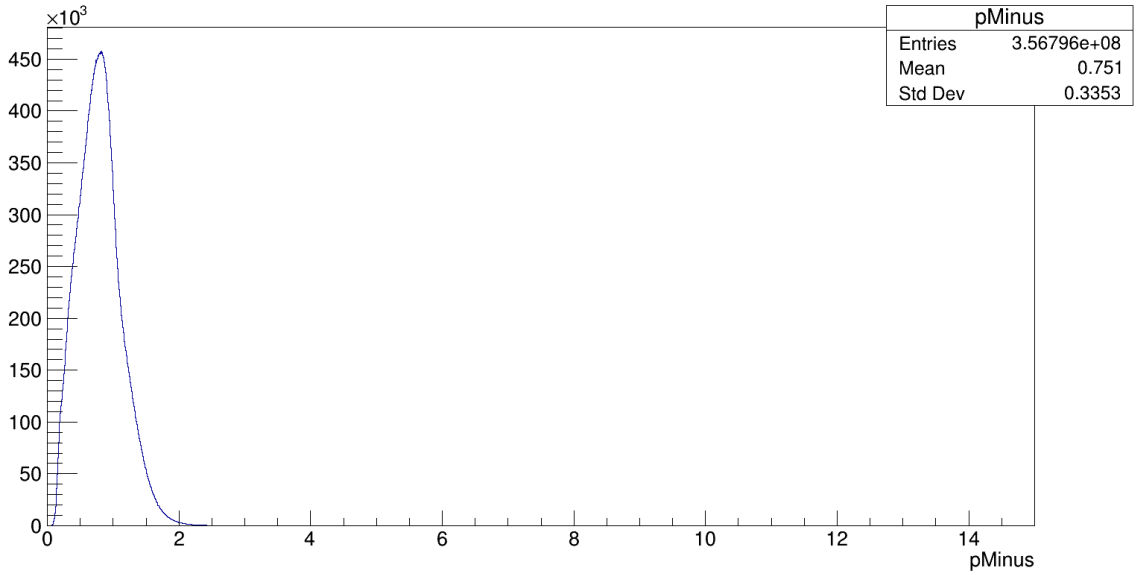


C.L > 0.001

BeamEnergy > 6.5 GeV

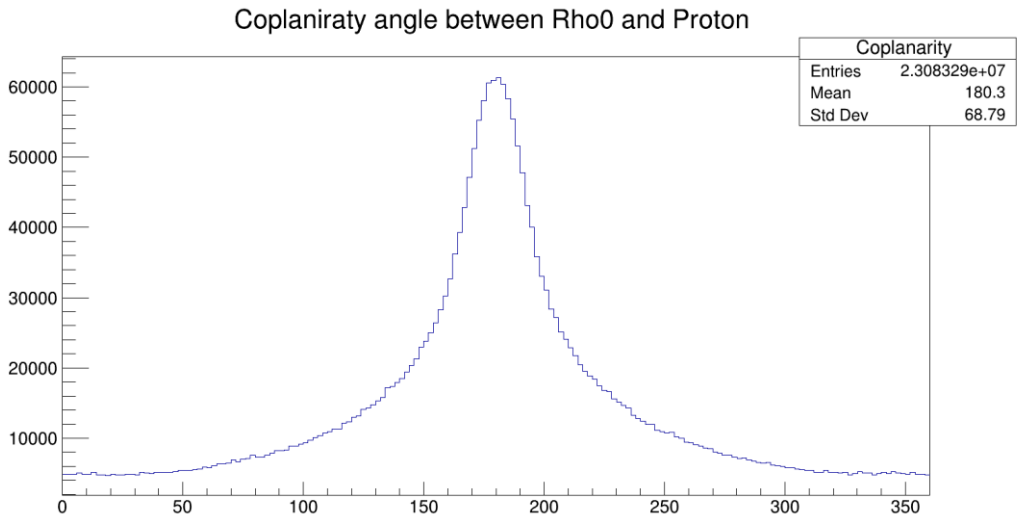
52 cm < Zvertex < 78 cm

Missing Unknown



Coplanarity of Rho0 (carbon)

Missing Boron

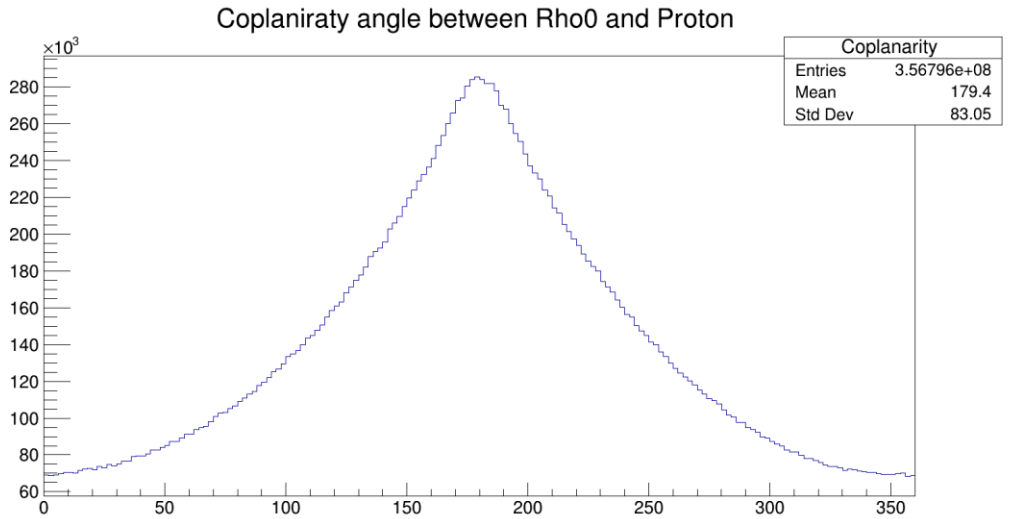


C.L > 0.001

BeamEnergy > 6.5 GeV

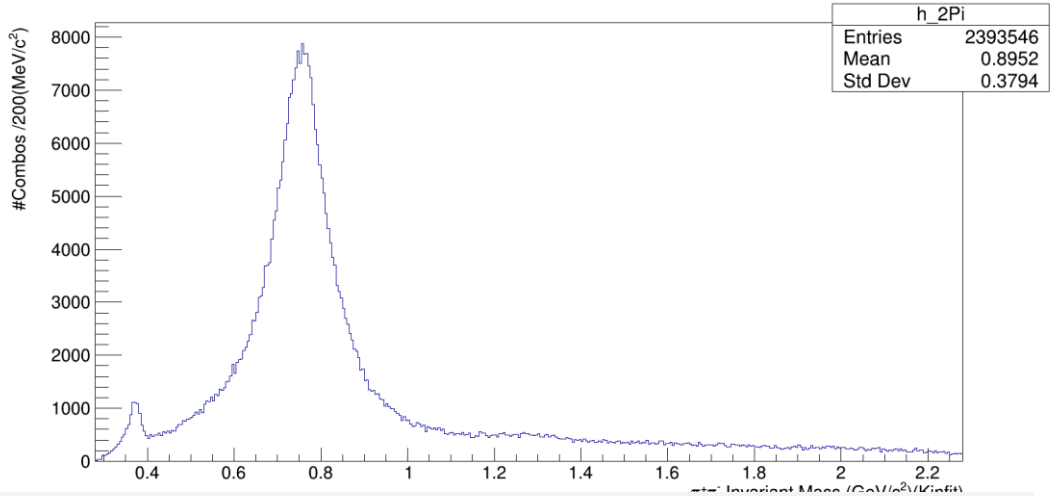
52 cm < Zvertex < 78 cm

Missing Unknown



Invariant Mass of Rho0 in (carbon)

Missing Boron



C.L > 0.001

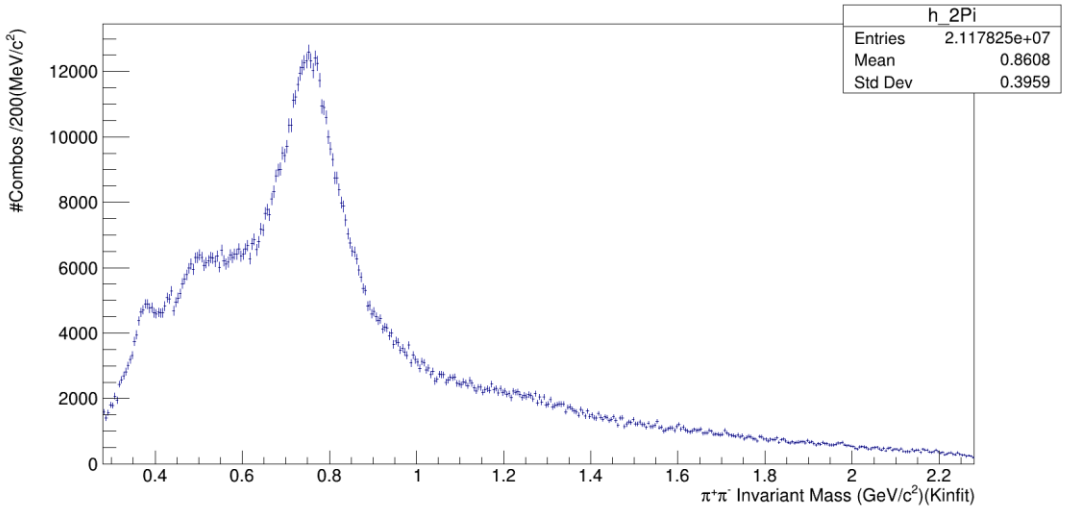
BeamEnergy > 6.5 GeV

52 cm < Zvertex < 78 cm

Coplanarity between Rho0 and Proton(165,195)

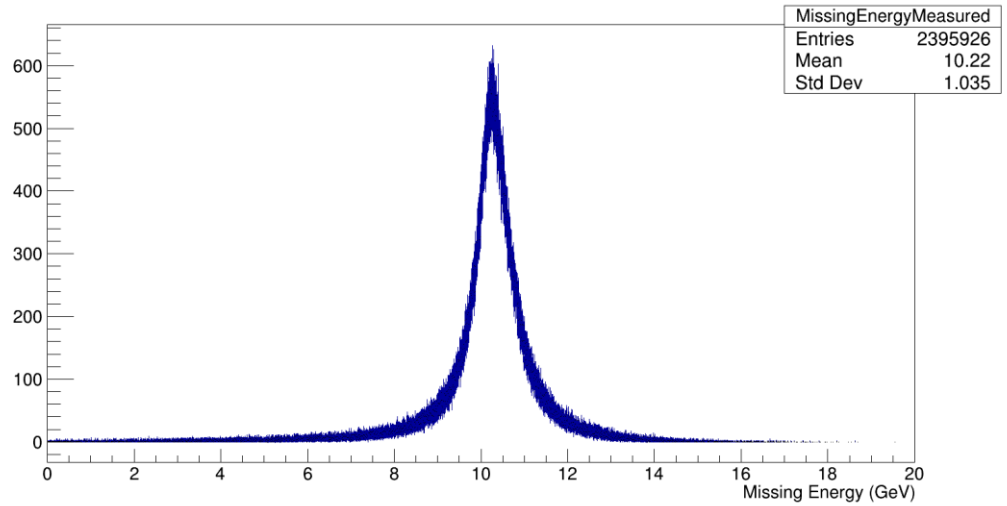
PipProt Invariant Mass > 1.3 && PimProt Invariant Mass >1.2

Missing unknown



Missing Energy of Rho Before applying cut on

Missing Boron



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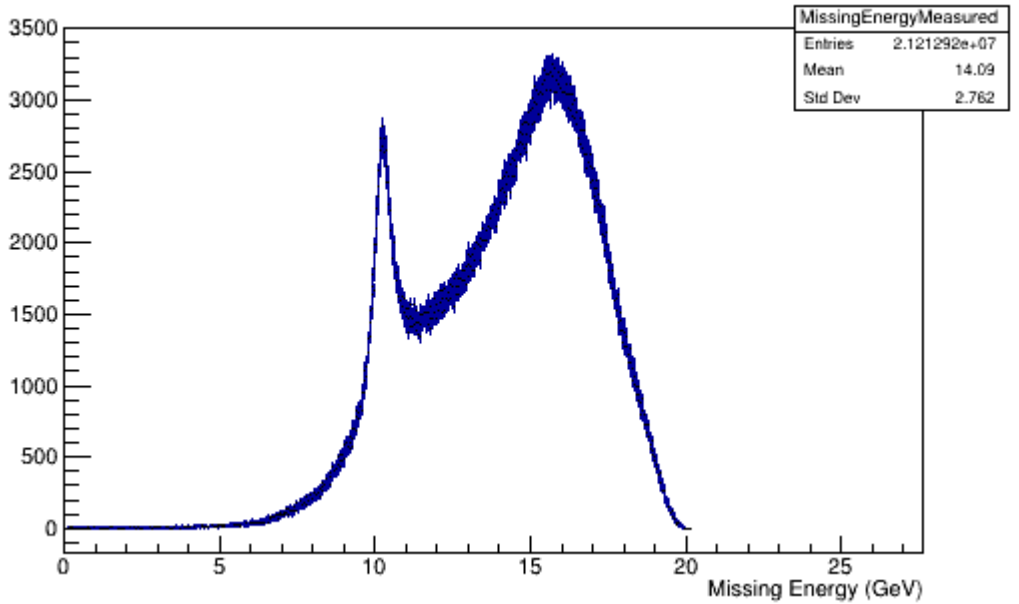
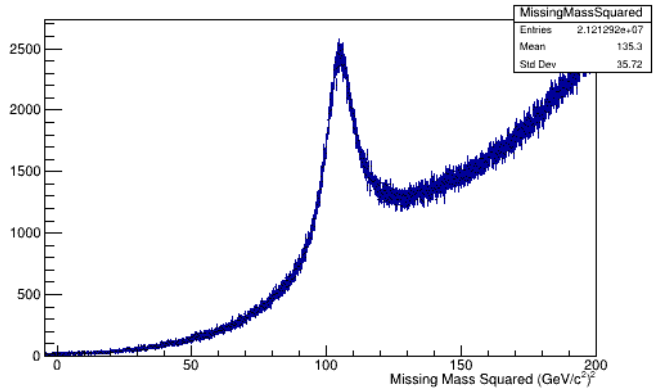




C.L > 0.001

BeamEnergy > 6.5 GeV

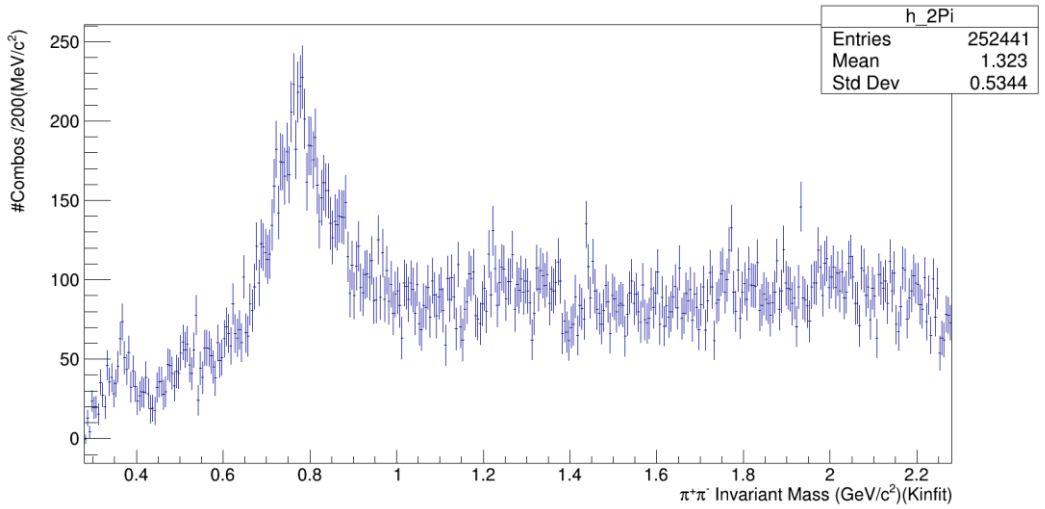
52 cm < Zvertex < 78 cm

Coplanarity between Rho0 and Proton(165,195)

PipProt Invariant Mass > 1.3 && PimProt Invariant Mass >1.2

Invariant Mass of Rho After applying cut on |t|>1,||u| > 1

Missing Boron



C.L > 0.001

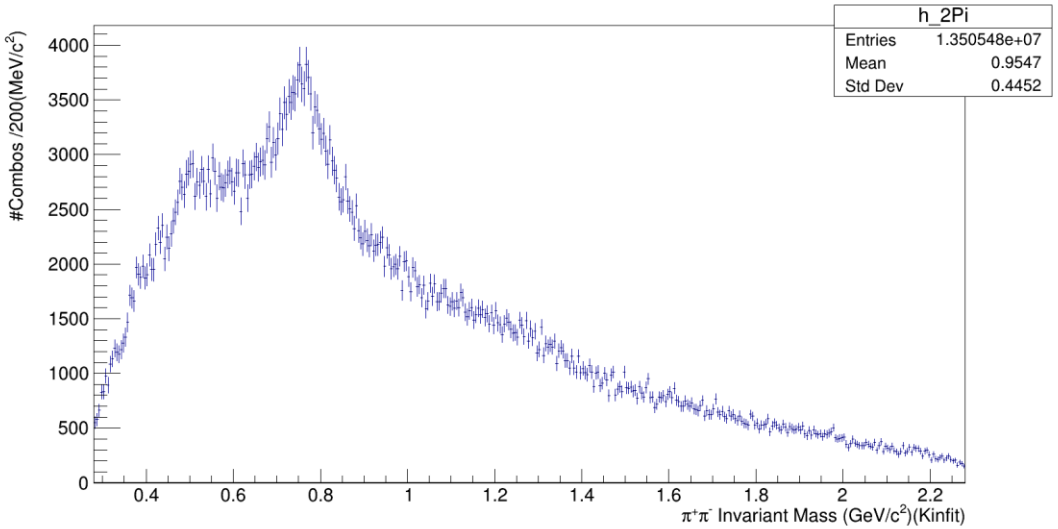
BeamEnergy > 6.5 GeV

52 cm < Zvertex < 78 cm

Coplanarity between Rho0 and Proton(165,195)

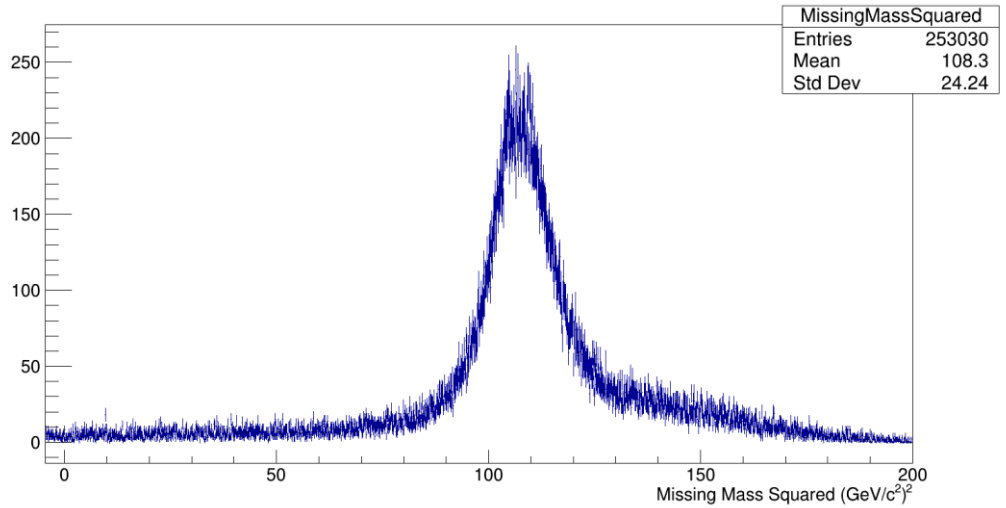
PipProt Invariant Mass > 1.3 && PimProt Invariant Mass >1.2

Missing Carbon



MM2 of Rho After applying cut on |t|>1,||u| > 1(Carbon)

Missing Boron



C.L > 0.001

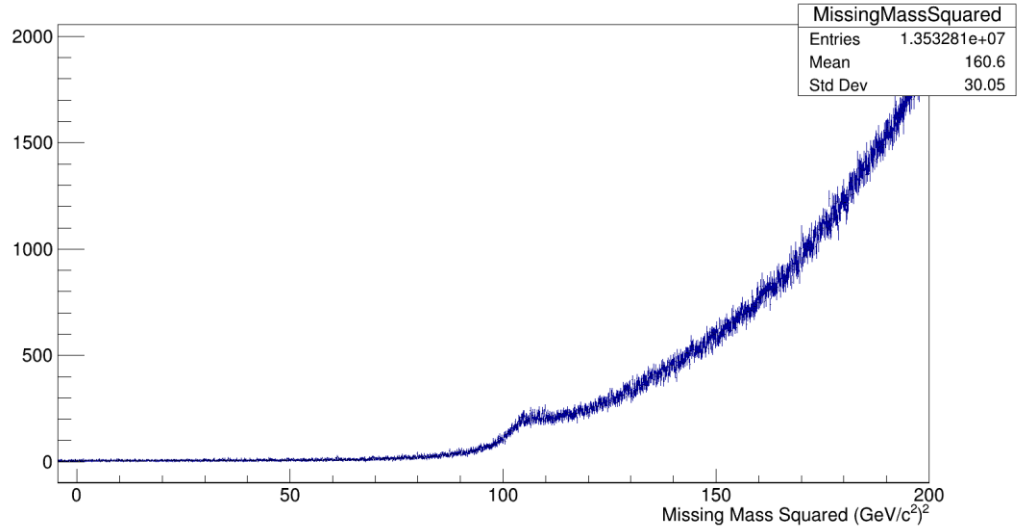
BeamEnergy > 6.5 GeV

52 cm < Zvertex < 78 cm

Coplanarity between Rho0 and Proton(165,195)

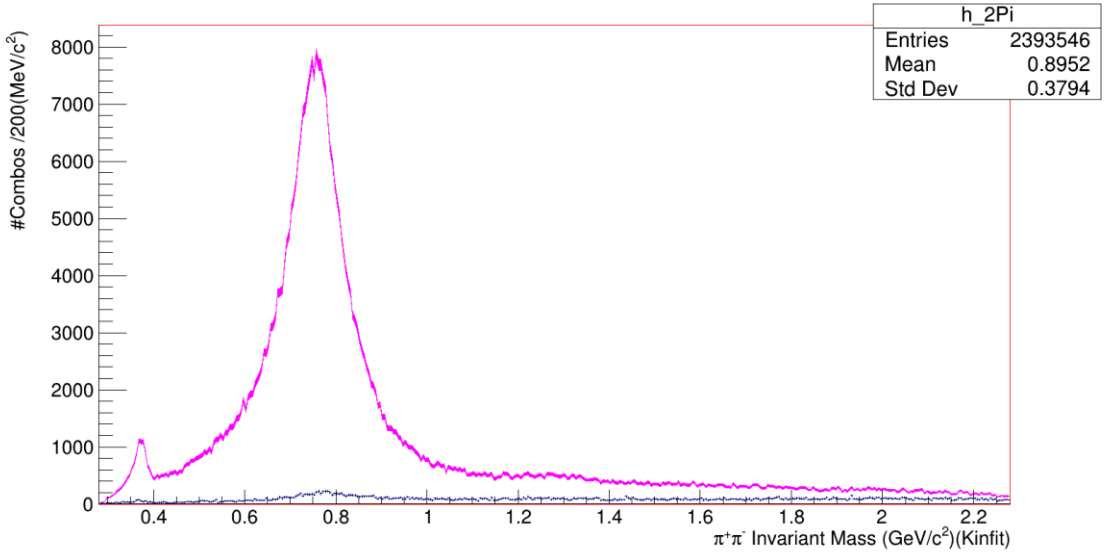
PipProt Invariant Mass > 1.3 && PimProt Invariant Mass >1.2

Missing Unknown



Invariant mass before and after applying cut on |t| and |u|

Missing Boron



Missing Unknown