

MINERvA_CCQE_XSec_1DQ2_nu_settings

- name: MINERvA CCOE XSec 1DO2 nu
- input : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT description :
- I--> MINERvA_CCQE_XSec_1DQ2_nu sample.
 I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current Numu |--> Signal: True CCQE/2p2h defined at the vertex level

- $\begin{array}{l} \bullet \text{ withe : } Q_{0E}^2 \text{ GeV}^2) \\ \bullet \text{ withe : } Q_{0E}^2 \text{ (cm}^2/\text{GeV}^2) \\ \bullet \text{ default_types : } \text{FIX_FREE_SHAPE/DIAG,FULL/NORM/MASK} \\ \end{array}$
- allowed_types : FIX/FULL

- enu_max: 10
 title: MINERvA_CCQE_XSec_1DQ2_nu
 data: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CCQE_XSec_1DQ2_nu \\$
- χ²: 19.3218 • NDOF: 8
- χ²/NDOF : 2.41522

MINERvA_CCQE_XSec_1DQ2_nu_20deg_settings

- name : MINERVA_CCQE_XSec_1DQ2_nu_20deg input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT
- description
- |--> MINERvA_CCQE_XSec_1DQ2_nu sample. |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current Numu
- I--> Signal: True CCQE/2p2h defined at the vertex level

- $\begin{array}{l} \text{signa: The CoDE-p2st with et as the Vetex EVG} \\ \text{• xtitle : } Q_{QE}^{2} \text{ } (\text{GeV}^{2}) \\ \text{• total types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK} \end{array}$
- allowed_types : FIX/FULL enu_min : 1.5

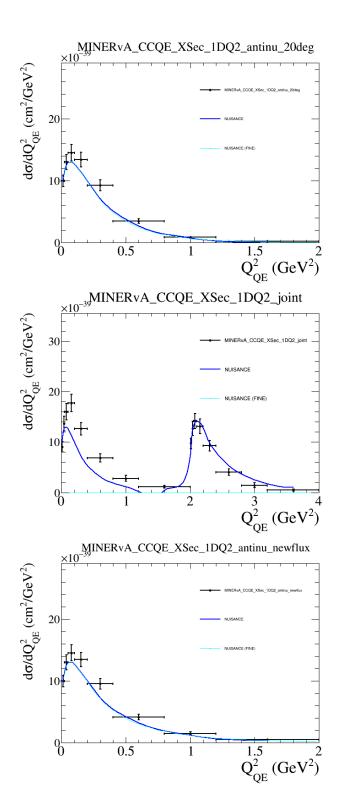
- enu_max : 10 title : MINERvA_CCQE_XSec_1DQ2_nu
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/nu$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CCQE_XSec_1DQ2_nu_20 deg \\$
- χ²: 19.5167
- NDOF: 8 • χ²/NDOF : 2.43958

MINERvA_CCQE_XSec_1DQ2_antinu_settings

- name : MINERVA_CCQE_XSec_1DQ2_antinu input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- type : DEFAULT • description :
- |--> MINERvA_CCQE_XSec_1DQ2_antinu sample
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current Numubar
- I--> Signal: True CCQE/2p2h defined at the vertex level

- $\begin{array}{l} \text{signa: The CoDE-p2st with et as the Vetex EVG} \\ \text{• xtitle : } Q_{QE}^{2} \text{ } (\text{GeV}^{2}) \\ \text{• total types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK} \end{array}$
- allowed_types : FIX/FULL • enu_min : 1.5

- enu_max : 10
 title : MINERvA_CCQE_XSec_1DQ2_antinu
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/lines/minerva-validation-061117/builds/nulled/lines/minerva-validations/minerva-validation-061117/builds/nulled/lines/minerva-validat$ covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CCQE_XSec_1DQ2_antinu \\$
- NDOF: 8
- χ²/NDOF : 2.48891



MINERvA_CCQE_XSec_1DQ2_antinu_20deg_settings

- name: MINERvA CCOE XSec 1DO2 antinu 20deg
- input : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- type : DEFAULT description :

- I--> MINERvA_CCQE_XSec_1DQ2_antinu sample I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current Numubar |--> Signal: True CCQE/2p2h defined at the vertex level

- $\begin{array}{l} \bullet \text{ withe : } Q_{0E}^2 \text{ GeV}^2) \\ \bullet \text{ withe : } Q_{0E}^2 \text{ (cm}^2/\text{GeV}^2) \\ \bullet \text{ default_types : } \text{FIX_FREE_SHAPE/DIAG,FULL/NORM/MASK} \\ \end{array}$
- allowed_types : FIX/FULL

- enu_max: 10

 title: MINERVA_CCQE_XSec_1DQ2_antinu

 title: MINERVA_CCQE_XSec_1DQ2_antinu

 data: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n

 covar: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- $\bullet \ original name : MINERvA_CCQE_XSec_1DQ2_antinu_20 deg \\$
- χ²: 19.6425
- NDOF: 8
- χ²/NDOF : 2.45532

MINERvA_CCQE_XSec_1DQ2_joint_settings

- name : MINERVA_CCQE_XSec_1DQ2_joint
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- type : DEFAULT
- description
- |--> MINERvA_CCQE_XSec_1DQ2_joint sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- l--> Signal: Any event with 1 electron, any nucleons, and no other FS particles * xtitle: $Q_{\rm gc}^2$ (GeV²) * ytitle: $d\sigma/dQ_{\rm gc}^2$ (cm²/GeV²) * default_types: FTX_FREE_SHAPE/DIAG,FULL/NORM/MASK

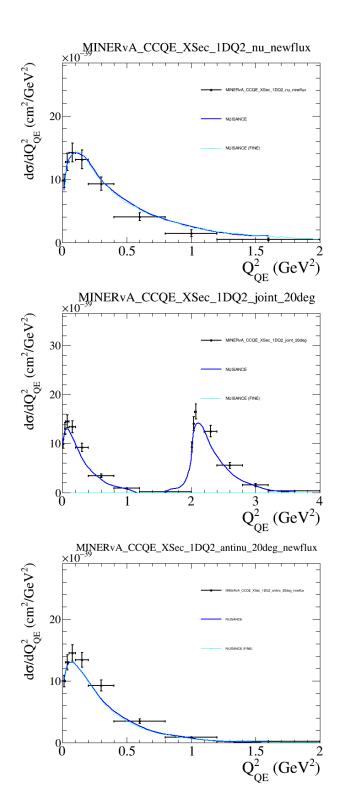
- allowed_types : FIX/FULL enu_min : 1.5

- enu_max : 10 title : MINERvA_CCQE_XSec_1DQ2_joint
- $\bullet \ data: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nullength. \\$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CCQE_XSec_1DQ2_joint \\$
- χ²: 332.433
- NDOF: 16
- γ²/NDOF : 20.7771

MINERvA_CCQE_XSec_1DQ2_antinu_newflux_settings

- name : MINERVA_CCQE_XSec_1DQ2_antinu_newflux
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- type : DEFAULT description
- |--> MINERvA_CCQE_XSec_1DQ2_antinu sample
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current Numubar
- I--> Signal: True CCQE/2p2h defined at the vertex level

- $\begin{array}{l} \text{signa: The CoDE-p2st with et as the Vetex EVG} \\ \text{• xtitle : } Q_{QE}^{2} \text{ } (\text{GeV}^{2}) \\ \text{• total types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK} \end{array}$
- allowed_types : FIX/FULL
- enu_min : 1.5
- enu_max : 10 title : MINERvA_CCQE_XSec_1DQ2_antinu
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/lines/minerva-validation-061117/builds/nulled/lines/minerva-validations/minerva-validation-061117/builds/nulled/lines/minerva-validat$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/ $\bullet \ original name : MINERvA_CCQE_XSec_1DQ2_antinu_newflux \\$
- NDOF: 8
- χ²/NDOF : 2.48891



MINERvA_CCQE_XSec_1DQ2_nu_newflux_settings

- name: MINERvA CCOE XSec 1DO2 nu newflux
- input : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT description :
- I--> MINERvA_CCQE_XSec_1DQ2_nu sample.
 I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current Numu |--> Signal: True CCQE/2p2h defined at the vertex level

- $\begin{array}{l} \bullet \text{ withe : } Q_{0E}^2 \text{ GeV}^2) \\ \bullet \text{ withe : } Q_{0E}^2 \text{ (cm}^2/\text{GeV}^2) \\ \bullet \text{ default_types : } \text{FIX_FREE_SHAPE/DIAG,FULL/NORM/MASK} \\ \end{array}$
- allowed_types : FIX/FULL

- emu_max: 10
 title: MINERvA_CCQE_XSec_1DQ2_nu
 data: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CCQE_XSec_1DQ2_nu_newflux \\$
- χ²: 19.3218
- NDOF: 8
- χ²/NDOF : 2.41522

MINERvA_CCQE_XSec_1DQ2_joint_20deg_settings

- name : MINERvA_CCQE_XSec_1DQ2_joint_20deg input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- type : DEFAULT
- description
- |--> MINERvA_CCQE_XSec_1DQ2_joint sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- l--> Signal: Any event with 1 electron, any nucleons, and no other FS particles * xtitle: $Q_{\rm gc}^2$ (GeV²) * ytitle: $d\sigma/dQ_{\rm gc}^2$ (cm²/GeV²) * default_types: FTX_FREE_SHAPE/DIAG,FULL/NORM/MASK

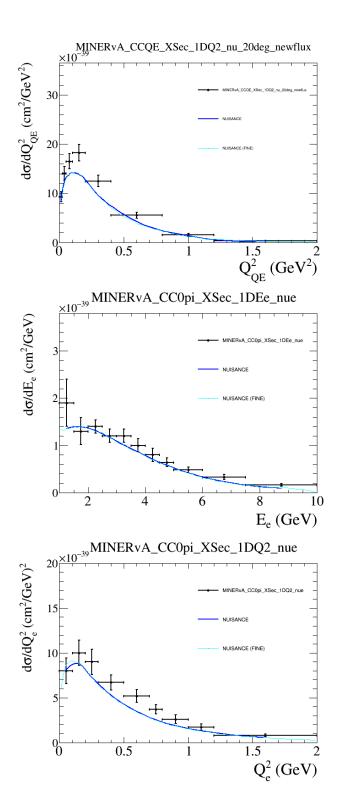
- allowed_types : FIX/FULL enu_min : 1.5

- enu_max : 10 title : MINERvA_CCQE_XSec_1DQ2_joint
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/nu$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CCQE_XSec_1DQ2_joint_20 deg \\$
- χ²: 38.4499 • NDOF: 16
- γ²/NDOF : 2.40312

MINERvA_CCQE_XSec_1DQ2_antinu_20deg_newflux_settings

- name : MINERvA_CCQE_XSec_1DQ2_antinu_20deg_newflux
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- type : DEFAULT · description :
- |--> MINERvA_CCQE_XSec_1DQ2_antinu sample
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current Numubar
- I--> Signal: True CCQE/2p2h defined at the vertex level

- $\begin{array}{l} \text{signa: The CoDE-p2st with et as the Vetex EVG} \\ \text{• xtitle : } Q_{QE}^{2} \text{ } (\text{GeV}^{2}) \\ \text{• total types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK} \end{array}$
- allowed_types : FIX/FULL
- enu_min : 1.5
- enu_max : 10 title : MINERvA_CCQE_XSec_1DQ2_antinu
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/lines/minerva-validation-061117/builds/nulled/lines/minerva-validations/minerva-validation-061117/builds/nulled/lines/minerva-validat$ covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name: MINERvA_CCQE_XSec_1DQ2_antinu_20 deg_newflux \\$
- NDOF: 8
- $\chi^2/NDOF : 2.45532$



MINERvA_CCQE_XSec_1DQ2_nu_20deg_newflux_settings

- name: MINERvA CCOE XSec 1DO2 nu 20deg newflux
- input : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT description :
- I--> MINERvA_CCQE_XSec_1DQ2_nu sample.
 I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current Numu |--> Signal: True CCQE/2p2h defined at the vertex level

- $\begin{array}{l} \bullet \text{ withe : } Q_{0E}^2 \text{ GeV}^2) \\ \bullet \text{ withe : } Q_{0E}^2 \text{ (cm}^2/\text{GeV}^2) \\ \bullet \text{ default_types : } \text{FIX_FREE_SHAPE/DIAG,FULL/NORM/MASK} \\ \end{array}$
- allowed_types : FIX/FULL

- cenu_max: 10

 title: MINERVA_CCQE_XSec_IDQ2_nu

 title: MINERVA_CCQE_XSec_IDQ2_nu

 data: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n

 coar: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- $\bullet \ original name : MINERvA_CCQE_XSec_1DQ2_nu_20 deg_new flux \\$
- χ²: 19.5167
- NDOF: 8
- χ²/NDOF : 2.43958

MINERvA_CC0pi_XSec_1DEe_nue_settings

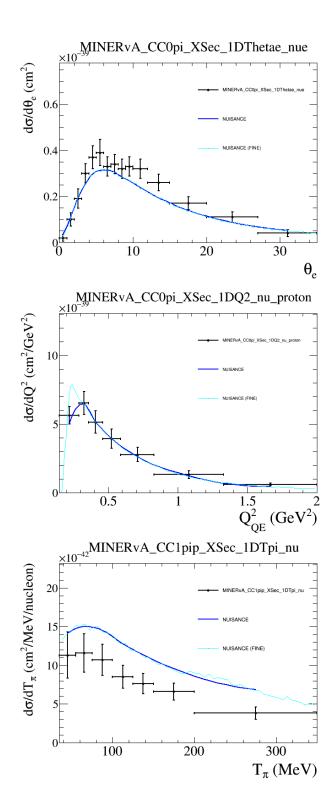
- name : MINERvA_CC0pi_XSec_1DEe_nue
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_nue.CH.2500000.3.prepared.ru
- type : DEFAULT
- description :
- |--> MINERvA CC0pi nue Ee sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nueba
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- $\bullet \ \textbf{xtitle} : E_e \ (GeV)$

- allowed_types : FIX/FULL enu_min : 0

- enu_max : 10 title : MINERvA ν_e CC0π
- data : /data/stowel/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
 covar : /data/stowel/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CC0pi_XSec_1DEe_nue
- χ²: 9.5264 • NDOF: 11
- $\chi^2/NDOF : 0.866036$

MINERvA_CC0pi_XSec_1DQ2_nue_settings

- name : MINERvA_CC0pi_XSec_1DQ2_nue
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_nue.CH.2500000.3.prepared.ru
- type : DEFAULT
- description :
- |--> MINERvA_CC0pi_XSec_1DQ2_nue sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : Q_e² (GeV)
- ytitle : $d\sigma/dQ^2$ (cm²/GeV)² default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- allowed_types : FIX/FULL
- enu_min : 0
- enu_max : 10 title : MINERvA_CC0pi_XSec_1DQ2_nue
- $\bullet \ data: / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/null$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/ $\bullet \ original name : MINERvA_CC0pi_XSec_1DQ2_nue \\$
- NDOF: 9
- χ²/NDOF : 1.10777



MINERvA_CC0pi_XSec_1DThetae_nue_settings

- name : MINERvA_CC0pi_XSec_1DThetae_nue
- input : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_nue.CH.2500000.3.prepared.ru
- type : DEFAULT description :
- |--> MINERvA_CC0pi_XSec_1DThetae_nue sample |--> Target: CH

- I--> Flux: MINERvA Forward Horn Current nue + nuebar
 I--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : θ_e
- ytitle : dσ/dθ_e (cm²)
- $\bullet \ default_types: FIX, FREE, SHAPE/DIAG, FULL/NORM/MASK$
- allowed_types : FIX/FULL enu_min : 0

- enu_max : 10 title : MINERvA ν_e CC0π
- data : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CC0pi_XSec_1DThe tae_nue \\$
- χ²: 13.0294
- NDOF: 15
- χ²/NDOF : 0.868625

MINERvA_CC0pi_XSec_1DQ2_nu_proton_settings

- name : MINERvA_CC0pi_XSec_1DQ2_nu_proton
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT
- description
- |--> MINERvA_CC0pi_XSec_1DQ2_nu_proton sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nueba
- l--> Signal: Any event with 1 electron, any nucleons, and no other FS particles xtitle : Q_{0E}^2 (GeV²) ytitle : dof/dQ^2 (cm²/GeV²)

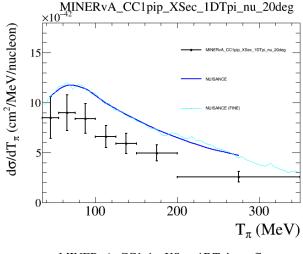
- default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- allowed_types : FIX/FULL enu_min : 0

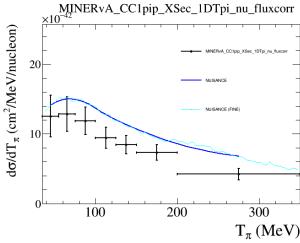
- enu_max : 100
 title : MINERvA_CC0pi_XSec_1DQ2_nu_proton
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/nu$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CC0pi_XSec_1DQ2_nu_proton
- χ²: 7.63844
- NDOF : 7 • γ²/NDOF : 1.09121

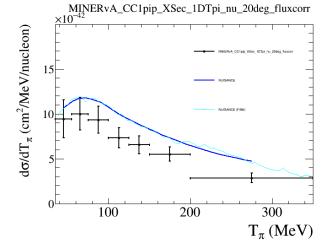
MINERvA_CC1pip_XSec_1DTpi_nu_settings

- name : MINERvA_CC1pip_XSec_1DTpi_nu
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT · description :
- I--> MINERvA_CC1pip_XSec_1DTpi_nu sample.
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : T_{π} (MeV)
- $\label{eq:potential} \begin{array}{l} \bullet \mbox{ ytitle : } d\sigma \! / dT_{\pi} \mbox{ (cm}^2 \! / \! MeV \! / \! nucleon) \\ \bullet \mbox{ default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK} \end{array}$
- allowed_types : FIX/FULL enu_min : 1.5

- enu_max : 10 title : MINERvA_CC1pip_XSec_1DTpi_nu
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/lines/minerva-validation-061117/builds/nulled/lines/minerva-validations/minerva-validations/minerva-validation-061117/builds/nulled/lines/minerva-validation-061117/builds/nulled/lines/minerva-validations/minerva-validation-061117/builds/nulled/lines/minerva-validation-06$ covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CC1pip_XSec_1DTpi_nu \\$
- χ²: 22.0665
- NDOF: 7 • χ²/NDOF : 3.15236







MINERvA_CC1pip_XSec_1DTpi_nu_20deg_settings

- name : MINERvA_CClpip_XSec_1DTpi_nu_20deg
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT description :

- |--> MINERvA_CC1pip_XSec_1DTpi_nu sample |--> Target: CH
- I--> Flux: MINERvA Forward Horn Current nue + nuebar
 I--> Signal: Any event with 1 electron, any nucleons, and no other FS particles

- signal: Any event wint relection, any nucleons, and no one
 with: T; (MeV)

 ytitl: dd/dT; (m²/MeV/nucleon)

 default_types: FIX.FREE.SHAPE/DIAG.FULL/NORM/MASK

 allowed_types: FIX/FULL

- enu_max:10
 title: MINERvA_CCIpip_XSec_IDTpi_nu
 data:/data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CC1pip_XSec_1DTpi_nu_20deg
- NDOF: 7 • χ²/NDOF : 3.27058

$MINERvA_CC1pip_XSec_1DTpi_nu_fluxcorr_settings$

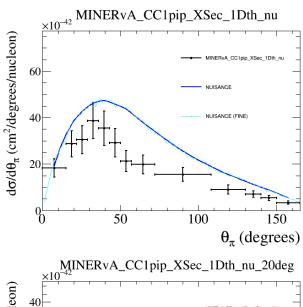
- name : MINERvA_CClpip_XSec_1DTpi_nu_fluxcorr input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT
- description
- |--> MINERvA_CC1pip_XSec_1DTpi_nu sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- I--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : T_{π} (MeV)
- $\label{eq:potential} \begin{tabular}{ll} \bullet \mbox{ ytitle : } $d\sigma/dT_\pi$ (cm^2/MeV/nucleon) \\ \hline \bullet \mbox{ default_types : } FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK \\ \end{tabular}$
- allowed_types : FIX/FULL enu_min : 1.5

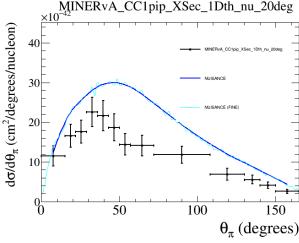
- enu_max : 10 title : MINERvA_CC1pip_XSec_1DTpi_nu
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/nu$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CC1pip_XSec_1DTpi_nu_fluxcorr
- χ²: 19.3819 • NDOF : 7
- γ²/NDOF : 2.76885

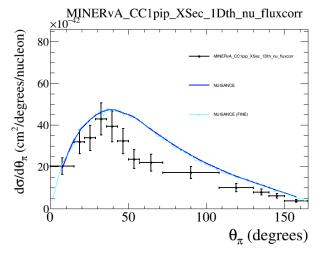
MINERvA_CC1pip_XSec_1DTpi_nu_20deg_fluxcorr_settings

- name : MINERvA_CC1pip_XSec_1DTpi_nu_20deg_fluxcorr input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT description
- I--> MINERvA_CC1pip_XSec_1DTpi_nu sample.
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : T_{π} (MeV)
- $\label{eq:potential} \begin{array}{l} \bullet \mbox{ ytitle : } d\sigma / dT_{\pi} \mbox{ (cm}^2 / MeV / nucleon) \\ \bullet \mbox{ default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK} \end{array}$
- allowed_types : FIX/FULL enu_min : 1.5

- enu_max : 10 title : MINERvA_CC1pip_XSec_1DTpi_nu
- data://data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
 covar:/data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CC1pip_XSec_1DTpi_nu_20 deg_flux corr \\$
- NDOF: 7
- χ²/NDOF : 2.86355







MINERvA_CC1pip_XSec_1Dth_nu_settings

- name : MINERvA_CClpip_XSec_IDth_nu
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT description :

- I--> MINERvA_CC1pip_XSec_1Dth_nu sample
 I--> Target: CH
- I--> Flux: MINERvA Forward Horn Current nue + nuebar
 I--> Signal: Any event with 1 electron, any nucleons, and no other FS particles

- xtitle : θ_{π} (degrees) ytitle : θ_{π} (degrees) ytitle : $d\sigma/d\theta_{\pi}$ (cm²/degrees/nucleon) default_types : FIX_FREE_SHAPE/DIAG,FULL/NORM/MASK
- allowed_types : FIX/FULL

- enm_max: 10
 title: MINERvA_CCIpip_XSec_IDth_nu
 data: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CC1pip_XSec_1Dth_nu \\$
- χ²: 104.614 • NDOF: 13
- χ²/NDOF : 8.04719

MINERvA_CC1pip_XSec_1Dth_nu_20deg_settings

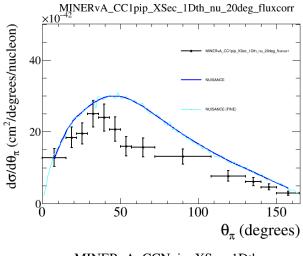
- name : MINERvA_CC1pip_XSec_1Dth_nu_20deg input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT
- description
- |--> MINERvA_CC1pip_XSec_1Dth_nu sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- I--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : θ_{π} (degrees)
- $\label{eq:title} \begin{tabular}{ll} \bullet \mbox{ ytitle : } d\sigma/d\theta_\pi \mbox{ (cm}^2/degrees/nucleon) \\ \hline \bullet \mbox{ default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK} \\ \end{tabular}$
- allowed_types : FIX/FULL enu_min : 1.5

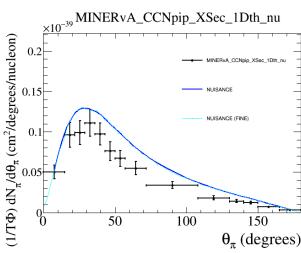
- enu_max : 10 title : MINERvA_CC1pip_XSec_1Dth_nu
- $\bullet \ data: / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/null$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CC1pip_XSec_1Dth_nu_20 deg \\$
- χ²: 89.2499 • NDOF: 13
- γ²/NDOF : 6.86537

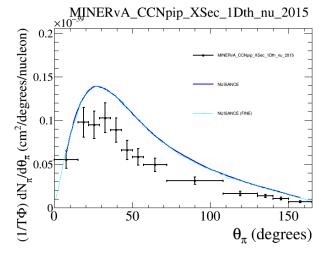
MINERvA_CC1pip_XSec_1Dth_nu_fluxcorr_settings

- name : MINERvA_CC1pip_XSec_1Dth_nu_fluxcorr input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT description
- |--> MINERvA_CC1pip_XSec_1Dth_nu sample.
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : θ_{π} (degrees)
- $\label{eq:title} \begin{tabular}{ll} \bullet \mbox{ ytitle : } d\sigma \! / d\theta_x \mbox{ (cm}^2 \! / degrees/nucleon) \\ \hline \bullet \mbox{ default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK} \\ \end{tabular}$
- allowed_types : FIX/FULL enu_min : 1.5

- enu_max : 10 title : MINERvA_CC1pip_XSec_1Dth_nu
- $\bullet \ data: / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/null$ covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CC1pip_XSec_1Dth_nu_fluxcorr
- NDOF: 13 • χ²/NDOF : 7.7638







MINERvA_CC1pip_XSec_1Dth_nu_20deg_fluxcorr_settings

- name : MINERvA_CClpip_XSec_1Dth_nu_20deg_fluxcorr input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT description :

- I--> MINERvA_CC1pip_XSec_1Dth_nu sample
 I--> Target: CH
- I--> Flux: MINERvA Forward Horn Current nue + nuebar
 I--> Signal: Any event with 1 electron, any nucleons, and no other FS particles

- xtitle : θ_{π} (degrees) ytitle : θ_{π} (degrees) ytitle : $d\sigma/d\theta_{\pi}$ (cm²/degrees/nucleon) default_types : FIX_FREE_SHAPE/DIAG,FULL/NORM/MASK
- allowed_types : FIX/FULL enu_min : 1.5

- enu_max: 10

 title: MINERVA_CCIpip_XSec_IDth_nu

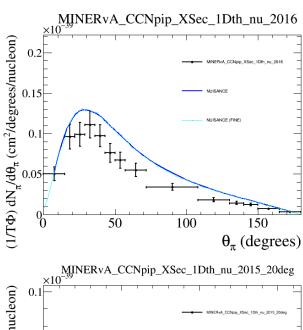
 title: MINERVA_CCIpip_XSec_IDth_nu

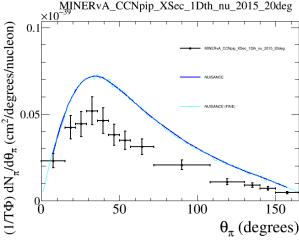
 data: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n

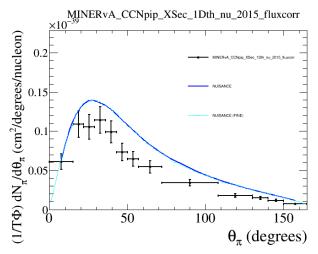
 covar: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- $\bullet \ original name : MINERvA_CC1pip_XSec_1Dth_nu_20deg_fluxcorr \\$
- χ²: 86.3164
- NDOF: 13
- χ²/NDOF : 6.63972

MINERvA_CCNpip_XSec_1Dth_nu_settings

- name : MINERvA_CCNpip_XSec_1Dth_nu
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. CH. 2500000. 1. prepared the property of the propert$
- type : DEFAULT
- description
- |--> MINERvA_CCNpip_XSec_1Dth_nu sample.
- |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : θ_{π} (degrees)
- ytitle : $(1/T\Phi) dN_{\pi}/d\theta_{\pi} (cm^2/degrees/nucleon)$
- $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$
- allowed_types : FIX/FULL
- enu_min : 1.5
- enu_max : 10
- title : MINERvA_CCNpip_XSec_1Dth_nu
- originalname : MINERvA_CCNpip_XSec_1Dth_nu
- χ^2 : 56.9773 • NDOF : 14
- $\chi^2/NDOF$: 4.06981
- MINERvA_CCNpip_XSec_1Dth_nu_2015_settings
- name: MINERvA_CCNpip_XSec_1Dth_nu_2015
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. CH. 2500000. 1. prepared the property of the propert$
- type : DEFAULT
- description
- |--> MINERvA_CCNpip_XSec_1Dth_nu sample.
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : θ_π (degrees)
- ytitle : $(1/T\Phi) dN_{\pi}/d\theta_{\pi} (cm^2/degrees/nucleon)$
- $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$
- $\bullet \ allowed_types: FIX/FULL \\$
- enu min: 1.5
- enu_max : 10
- title : MINERvA_CCNpip_XSec_1Dth_nu
- originalname : MINERvA_CCNpip_XSec_1Dth_nu_2015 • χ^2 : 80.6474
- NDOF : 13
- χ²/NDOF : 6.20364







MINERvA_CCNpip_XSec_1Dth_nu_2016_settings

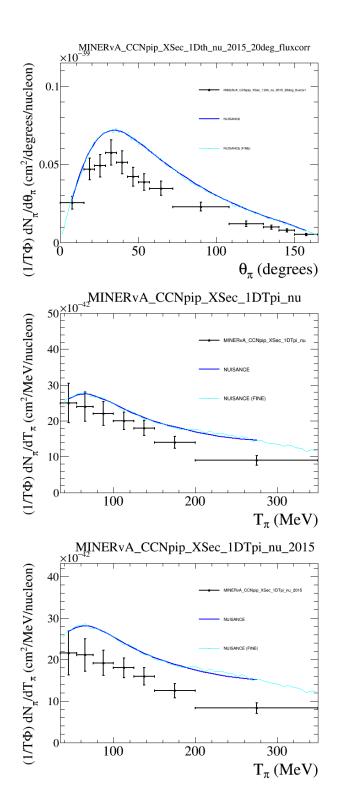
- name : MINERvA_CCNpip_XSec_1Dth_nu_2016
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. CH. 2500000. 1. prepared the property of the propert$
- type : DEFAULT
- description
- |--> MINERvA_CCNpip_XSec_1Dth_nu sample
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- I--> Signal: Any event with I electron, any nucleons, and no other FS particles
- xtitle : θ_{π} (degrees)
- ytitle : $(1/T\Phi) dN_{\pi}/d\theta_{\pi} (cm^2/degrees/nucleon)$
- default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- $\bullet \ allowed_types: FIX/FULL$
- enu_min: 1.5
- enu_max : 10
- $\bullet \ title: MINERvA_CCNpip_XSec_1Dth_nu \\$
- $\bullet \ original name : MINERvA_CCNpip_XSec_1Dth_nu_2016 \\$
- χ^2 : 56.9773 • NDOF : 14
- χ²/NDOF : 4.06981

MINERvA_CCNpip_XSec_1Dth_nu_2015_20deg_settings

- name : MINERvA_CCNpip_XSec_1Dth_nu_2015_20deg
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. CH. 2500000. 1. prepared the property of the propert$
- type : DEFAULT
- description
- |--> MINERvA_CCNpip_XSec_1Dth_nu sample.
- |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : θ_{π} (degrees)
- ytitle : $(1/T\Phi) dN_{\pi}/d\theta_{\pi} (cm^2/degrees/nucleon)$
- $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$
- allowed_types : FIX/FULL
- enu_min : 1.5
- enu_max : 10
- title : MINERvA_CCNpip_XSec_1Dth_nu
- $\bullet \ original name: MINERvA_CCNpip_XSec_1Dth_nu_2015_20 deg$
- χ^2 : 85.1578
- NDOF : 13
- $\chi^2/NDOF$: 6.5506

MINERvA_CCNpip_XSec_1Dth_nu_2015_fluxcorr_settings

- name: MINERvA_CCNpip_XSec_1Dth_nu_2015_fluxcorr
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. CH. 2500000. 1. prepared the property of the propert$
- type : DEFAULT
- description
- |--> MINERvA_CCNpip_XSec_1Dth_nu sample.
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : θ_π (degrees)
- ytitle : $(1/T\Phi) dN_{\pi}/d\theta_{\pi} (cm^2/degrees/nucleon)$
- $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$
- $\bullet \ allowed_types: FIX/FULL \\$
- enu min: 1.5
- enu_max : 10
- title : MINERvA_CCNpip_XSec_1Dth_nu
- originalname : MINERvA_CCNpip_XSec_1Dth_nu_2015_fluxcorr
- χ²: 72.6073
- NDOF : 13
- χ²/NDOF : 5.58517



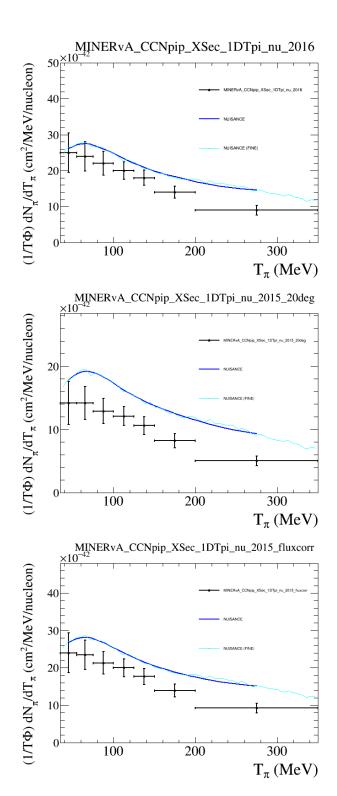
MINERvA_CCNpip_XSec_1Dth_nu_2015_20deg_fluxcorr_settings

- name : MINERvA_CCNpip_XSec_1Dth_nu_2015_20deg_fluxcorr
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. CH. 2500000. 1. prepared the property of the propert$
- type : DEFAULT
- description
- |--> MINERvA_CCNpip_XSec_1Dth_nu sample
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- I--> Signal: Any event with I electron, any nucleons, and no other FS particles
- xtitle : θ_{π} (degrees)
- ytitle : $(1/T\Phi) dN_{\pi}/d\theta_{\pi} (cm^2/degrees/nucleon)$
- default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- allowed_types : FIX/FULL
- enu_min: 1.5
- enu_max : 10
- $\bullet \ title: MINERvA_CCNpip_XSec_1Dth_nu \\$
- $\bullet \ original name : MINERvA_CCNpip_XSec_1Dth_nu_2015_20deg_fluxcorr$
- χ^2 : 75.422 • NDOF : 13
- χ²/NDOF : 5.80169

MINERvA_CCNpip_XSec_1DTpi_nu_settings

- name : MINERvA_CCNpip_XSec_1DTpi_nu
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. CH. 2500000. 1. prepared the property of the propert$
- type : DEFAULT
- description
- |--> MINERvA_CCNpip_XSec_1DTpi_nu sample.
- |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : T_{π} (MeV)
- ytitle : $(1/T\Phi) dN_{\pi}/dT_{\pi} (cm^2/MeV/nucleon)$
- $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$
- $\bullet \ allowed_types: FIX/FULL \\$
- enu min: 1.5
- enu_max : 10
- $\bullet \ title : MINERvA_CCNpip_XSec_1DTpi_nu \\$
- originalname : MINERvA_CCNpip_XSec_1DTpi_nu
- χ^2 : 25.081
- NDOF : 7 • $\chi^2/NDOF : 3.583$
- MINERvA_CCNpip_XSec_1DTpi_nu_2015_settings

- name: MINERvA_CCNpip_XSec_1DTpi_nu_2015
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. CH. 2500000. 1. prepared the property of the propert$
- type : DEFAULT
- description
- |--> MINERvA_CCNpip_XSec_1DTpi_nu sample.
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- $\bullet \ \textbf{xtitle} : T_{\pi} \left(MeV \right)$
- ytitle : $(1/T\Phi) dN_{\pi}/dT_{\pi} (cm^2/MeV/nucleon)$
- $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$
- $\bullet \ allowed_types: FIX/FULL \\$ • enu min: 1.5
- enu_max : 10
- title : MINERvA_CCNpip_XSec_1DTpi_nu
- $\bullet \ original name: MINERvA_CCNpip_XSec_1DTpi_nu_2015 \\$
- χ^2 : 35.4956 NDOF: 7
- χ²/NDOF : 5.07079



MINERvA_CCNpip_XSec_1DTpi_nu_2016_settings

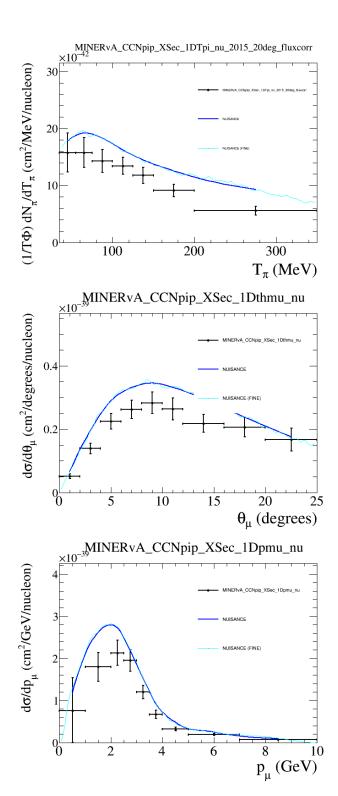
- name : MINERvA_CCNpip_XSec_1DTpi_nu_2016
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. CH. 2500000. 1. prepared the property of the propert$
- type : DEFAULT
- description
- |--> MINERvA_CCNpip_XSec_lDTpi_nu sample.
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : T_{π} (MeV)
- ytitle : $(1/T\Phi) dN_{\pi}/dT_{\pi} (cm^2/MeV/nucleon)$
- default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- $\bullet \ allowed_types: FIX/FULL \\$
- enu_min: 1.5
- enu_max : 10
- $\bullet \ title : MINERvA_CCNpip_XSec_1DTpi_nu \\$
- $\bullet \ original name : MINERvA_CCNpip_XSec_1DTpi_nu_2016 \\$
- χ^2 : 25.081
- NDOF : 7
- χ²/NDOF : 3.583

MINERvA_CCNpip_XSec_1DTpi_nu_2015_20deg_settings

- name : MINERvA_CCNpip_XSec_1DTpi_nu_2015_20deg
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. CH. 2500000. 1. prepared the property of the propert$
- type : DEFAULT
- description
- |--> MINERvA_CCNpip_XSec_1DTpi_nu sample.
- |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : T_{π} (MeV)
- ytitle : $(1/T\Phi) dN_{\pi}/dT_{\pi} (cm^2/MeV/nucleon)$
- $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$
- $\bullet \ allowed_types: FIX/FULL \\$
- enu min: 1.5
- enu_max : 10
- title : MINERvA_CCNpip_XSec_1DTpi_nu
- $\bullet \ original name : MINERvA_CCNpip_XSec_1DTpi_nu_2015_20 deg \\$
- χ^2 : 41.2664 NDOF: 7
- χ²/NDOF : 5.89519

MINERvA_CCNpip_XSec_1DTpi_nu_2015_fluxcorr_settings

- name: MINERvA_CCNpip_XSec_1DTpi_nu_2015_fluxcorr
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. CH. 2500000. 1. prepared the property of the propert$
- type : DEFAULT
- description
- |--> MINERvA_CCNpip_XSec_1DTpi_nu sample.
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- $\bullet \ \textbf{xtitle} : T_{\pi} \left(MeV \right)$
- ytitle : $(1/T\Phi) dN_{\pi}/dT_{\pi} (cm^2/MeV/nucleon)$
- $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$
- $\bullet \ allowed_types: FIX/FULL \\$ • enu min: 1.5
- enu_max : 10
- title : MINERvA_CCNpip_XSec_1DTpi_nu
- $\bullet \ original name : MINERvA_CCNpip_XSec_1DTpi_nu_2015_fluxcorr \\$
- χ² : 31.391 NDOF : 7
- χ²/NDOF : 4.48442



MINERvA_CCNpip_XSec_1DTpi_nu_2015_20deg_fluxcorr_settings

- name : MINERvA_CCNpip_XSec_1DTpi_nu_2015_20deg_fluxcorr
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. CH. 2500000. 1. prepared the property of the propert$
- type : DEFAULT
- description
- |--> MINERvA_CCNpip_XSec_1DTpi_nu sample
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : T_{π} (MeV)
- ytitle : $(1/T\Phi) dN_{\pi}/dT_{\pi} (cm^2/MeV/nucleon)$
- default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- $\bullet \ allowed_types: FIX/FULL \\$
- enu_min: 1.5
- enu_max : 10
- $\bullet \ title : MINERvA_CCNpip_XSec_1DTpi_nu \\$
- $\bullet \ original name : MINERvA_CCNpip_XSec_1DTpi_nu_2015_20 deg_flux corresponds to the contract of the contra$
- χ^2 : 36.2671 • NDOF : 7
- $\chi^2/NDOF$: 5.18101

MINERvA_CCNpip_XSec_1Dthmu_nu_settings

- name : MINERvA_CCNpip_XSec_1Dthmu_nu
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT
- description |--> MINERvA_CCNpip_XSec_|Dthmu_nu sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : θ_{μ} (degrees)
- ytitle : $d\sigma/d\theta_{\mu}$ (cm²/degrees/nucleon) default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- allowed_types : FIX/FULL enu_min : 1.5

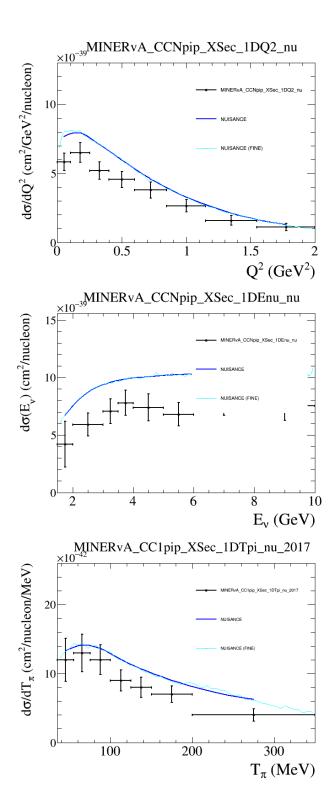
- enu_max: 10
 title: MINERvA_CCNpip_XSec_1Dthmu_nu
 data: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCNpip_XSec_1Dthmu_nu
- χ²: 20.3228 • NDOF: 9
- γ²/NDOF : 2.25809

MINERvA_CCNpip_XSec_1Dpmu_nu_settings

- name : MINERvA_CCNpip_XSec_1Dpmu_nu
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT · description :
- |--> MINERvA_CCNpip_XSec_1Dpmu_nu sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar

- allowed_types : FIX/FULL enu_min : 1.5

- enu_max : 10 title : MINERvA_CCNpip_XSec_1Dpmu_nu
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/lines/minerva-validation-061117/builds/nulled/lines/minerva-validations/minerva-validation-061117/builds/nulled/lines/minerva-validat$ covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CCNpip_XSec_1Dpmu_nu \\$
- NDOF: 9
- $\chi^2/NDOF$: 3.97731



MINERvA_CCNpip_XSec_1DQ2_nu_settings

- name : MINERvA_CCNpip_XSec_1DQ2_nu
- input : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT description :
- I--> MINERvA_CCNpip_XSec_1DQ2_nu sample
 I--> Target: CH

- I--> Flux: MINERvA Forward Horn Current nue + nuebar
 I--> Signal: Any event with 1 electron, any nucleons, and no other FS particles

- xtitle : Q^2 (GeV²) ytitle : $d\sigma/dQ^2$ (cm²/GeV²/nucleon) default_types : FIX_FREE_SHAPE/DIAG_FULL/NORM/MASK
- allowed_types : FIX/FULL

- enu_max: 10
 title: MINERvA_CCNpip_XSec_1DQ2_nu
 data: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CCNpip_XSec_1DQ2_nu \\$
- χ²: 15.5382 • NDOF: 8
- χ²/NDOF : 1.94227

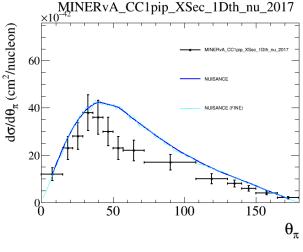
MINERvA_CCNpip_XSec_1DEnu_nu_settings

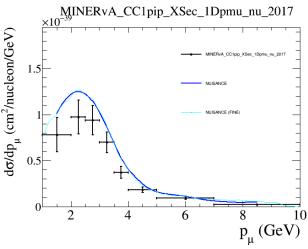
- name : MINERvA_CCNpip_XSec_1DEnu_nu
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT
- description
- |--> MINERvA_CCNpip_XSec_1DEnu_nu sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- $\bullet \ \textbf{xtitle} : E_{_{\! V}}\left(\text{GeV}\right)$
- $\label{eq:state} \begin{array}{l} \bullet \mbox{ ytitle} : d\sigma(E_{_{V}}) \mbox{ (cm}^{2}/\mbox{nucleon)} \\ \bullet \mbox{ default_types} : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK \end{array}$
- allowed_types : FIX/FULL enu_min : 1.5

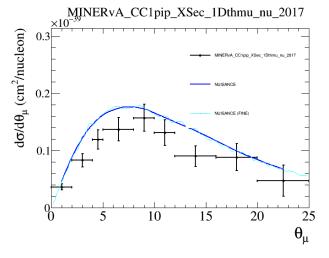
- enu_max: 10
 title: MINERvA_CCNpip_XSec_IDEnu_nu
 data: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
 data: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCNpip_XSec_1DEnu_nu
- χ²: 19.1013
- NDOF: 8 • χ²/NDOF : 2.38766

MINERvA_CC1pip_XSec_1DTpi_nu_2017_settings

- name: MINERvA_CC1pip_XSec_1DTpi_nu_2017
 input: GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- $\bullet \ default_types: {\tt FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK}$
- allowed_types : FIX/FULL
- enu_min : 1.5
- enu_max : 10 description :
- I--> Target: CH |--> Flux: MINERvA Forward Horn Current numu ONLY
- 1--> Signal: Any event with 1 muon, and 1pi+ or 1pi- in FS. W < 1.4
- data : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n $\bullet \ covar: / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/minerva-validation-0$
- title : CC1π Updated
- xtitle : T_{π} (MeV)
- ytitle : dσ/dT_π (cm²/nucleon/MeV)
- originalname : MINERvA_CC1pip_XSec_1DTpi_nu_2017
- χ²: 13.5007
- NDOF: 7
- $\chi^2/NDOF$: 1.92868







MINERvA_CC1pip_XSec_1Dth_nu_2017_settings

```
    name: MINERvA_CC1pip_XSec_1Dth_nu_2017
    input: GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared

• type : DEFAULT
\bullet \ default\_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK

    allowed_types : FIX/FULL

• enu_min : 1.5
• enu_max : 10
• description :
            I--> Target: CH
          |--> Flux: MINERvA Forward Horn Current numu ONLY
                --> Signal: Any event with 1 muon, and 1pi+ or 1pi- in FS. W < 1.4
\bullet \ data: / data/stowell/NIWG/NUISANCEMC/minerva\_tuning/sample\_validations/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061
\bullet \ covar: / data/stowell/NIWG/NUISANCEMC/minerva\_tuning/sample\_validations/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-06117/builds/minerva-validation-06117/builds/minerva-validation-0611
• title : CC1π Updated
• xtitle : \theta_{\pi}

    ytitle : dσ/dθ<sub>±</sub> (cm<sup>2</sup>/nucleon)

  • originalname : MINERvA_CC1pip_XSec_1Dth_nu_2017
• \chi^2: 82.9066
• NDOF: 14
• \chi^2/NDOF : 5.9219
```

MINERvA_CC1pip_XSec_1Dpmu_nu_2017_settings

```
• name : MINERvA_CC1pip_XSec_1Dpmu_nu_2017
• input : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
\bullet \ default\_types: {\tt FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK}

    allowed_types : FIX/FULL

• enu_min : 1.5
• enu_max : 10
• description :
  I--> Target: CH
  I--> Flux: MINERvA Forward Horn Current numu ONLY
  I--> Signal: Any event with 1 muon, and 1pi+ or 1pi- in FS. W < 1.4
• data : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n

    covar: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/

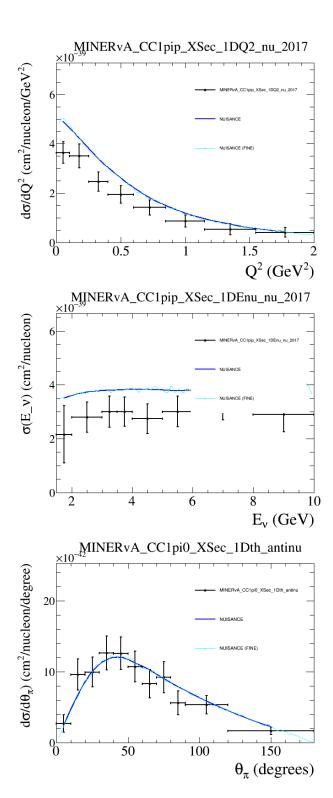
• title : CC1π Updated
• xtitle : p<sub>µ</sub> (GeV)
• ytitle : dø/dp<sub>µ</sub> (cm²/nucleon/GeV)
• originalname : MINERvA_CC1pip_XSec_1Dpmu_nu_2017
• \chi^2: 20.458
• NDOF: 8
• \chi^2/NDOF : 2.55725
```

MINERvA_CC1pip_XSec_1Dthmu_nu_2017_settings

```
name: MINERvA_CC1pip_XSec_1Dthmu_nu_2017
  \bullet \ input: GENIE: @GENIE\_DIR/gntp.R-2\_6\_3. Official Default. Default. MINERvA\_fhc\_numu. CH. 2500000.1. prepared the property of the property
  • default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
• allowed_types : FIX/FULL
  • enu_min : 1.5
• enu_max : 10
• description :
                   I--> Target: CH
                   |--> Flux: MINERvA Forward Horn Current numu ONLY
                   1--> Signal: Any event with 1 muon, and 1pi+ or 1pi- in FS. W < 1.4
  \bullet \ data: / data/stowell/NIWG/NUISANCEMC/minerva\_tuning/sample\_validations/minerva-validation-061117/builds/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/nulled/null
   \bullet \ covar: / data/stowell/NIWG/NUISANCEMC/minerva\_tuning/sample\_validations/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-061117/builds/minerva-validation-0
  • title : CC1π Updated
  • xtitle : \theta_{\mu}

    ytitle : dσ/dθ<sub>ii</sub> (cm²/nucleon)

     • originalname : MINERvA_CC1pip_XSec_1Dthmu_nu_2017
  • \chi^2: 32.2319
  • NDOF: 9
  • \chi^2/NDOF : 3.58132
```



MINERvA_CC1pip_XSec_1DQ2_nu_2017_settings

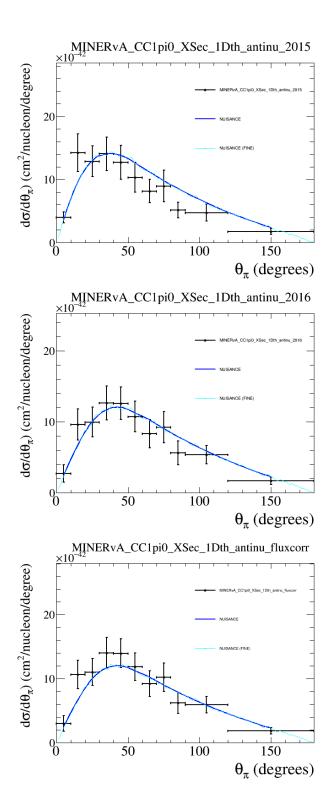
- name: MINERvA_CC1pip_XSec_1DQ2_nu_2017
 input: GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared • type : DEFAULT $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$ allowed_types : FIX/FULL
 - enu_min : 1.5 • enu_max : 10 • description :
 - I--> Target: CH |--> Flux: MINERvA Forward Horn Current numu ONLY --> Signal: Any event with 1 muon, and 1pi+ or 1pi- in FS. W < 1.4
 - $\bullet \ data: / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/minerva-validation-061$
 - $\bullet \ covar: / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/minerva-validation-0$
 - title : $CC1\pi$ Updated
 - $\bullet \ \textbf{xtitle} : Q^2 \, (GeV^2) \\$ • ytitle : do/dQ2 (cm2/nucleon/GeV2)
 - originalname : MINERvA_CC1pip_XSec_1DQ2_nu_2017
 - χ^2 : 15.6999 • NDOF: 8 • χ²/NDOF : 1.96249

MINERvA_CC1pip_XSec_1DEnu_nu_2017_settings

- name: MINERvA_CC1pip_XSec_1DEnu_nu_2017
 input: GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- $\bullet \ default_types: {\tt FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK}$
- allowed_types : FIX/FULL
- enu_min : 1.5
- enu_max : 10 description :
- I--> Target: CH
- I--> Flux: MINERvA Forward Horn Current numu ONLY
- I--> Signal: Any event with 1 muon, and 1pi+ or 1pi- in FS. W < 1.4
- data : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- $\bullet \ covar: / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/minerva-validation-0$
- title : CC1π Updated
- xtitle : E_v (GeV) ytitle : σ(E_v) (cm²/nucleon)
- originalname : MINERvA_CC1pip_XSec_1DEnu_nu_2017
- χ²: 7.03107 • NDOF: 8
- $\chi^2/NDOF : 0.878883$

MINERvA_CC1pi0_XSec_1Dth_antinu_settings

- name: MINERvA_CC1pi0_XSec_1Dth_antinu
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. prepared to the property of the p$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1Dth_antinu sample
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubar
- I--> Signal: Any event with 1 muon, 1 pion, no other tracks
- xtitle : θ_π (degrees)
- ytitle : $d\sigma/d\theta_{\pi}$) (cm²/nucleon/degree)
- $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$
- $\bullet \ allowed_types: FIX/FULL \\$
- enu min: 1.5
- enu_max : 10
- title : MINERvA_CC1pi0_XSec_1Dth_antinu
- originalname : MINERvA_CC1pi0_XSec_1Dth_antinu
- χ^2 : 7.75216
- NDOF : 11
- χ²/NDOF : 0.704742



MINERvA_CC1pi0_XSec_1Dth_antinu_2015_settings

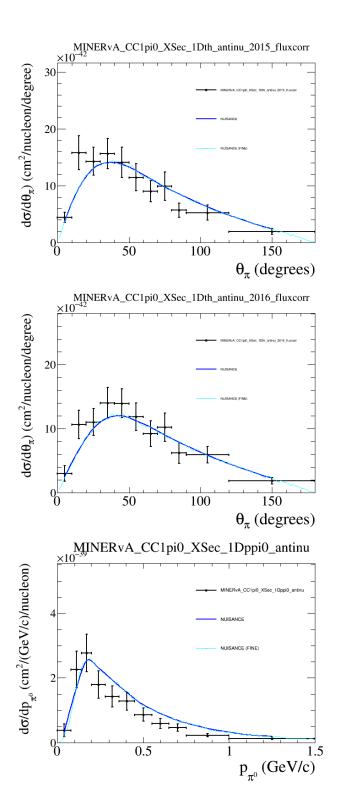
- name : MINERvA_CC1pi0_XSec_1Dth_antinu_2015
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. preparation of the property of th$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1Dth_antinu sample
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubar
- I--> Signal: Any event with 1 muon, 1 pion, no other tracks
- xtitle : θ_{π} (degrees)
- ytitle : $d\sigma/d\theta_{\pi}$) (cm²/nucleon/degree)
- default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
 allowed_types : FIX/FULL
- enu_min: 1.5
- enu_max : 10
- title : MINERvA_CC1pi0_XSec_1Dth_antinu
- originalname : MINERvA_CC1pi0_XSec_1Dth_antinu_2015
- χ^2 : 17.2829
- NDOF : 11
- χ²/NDOF : 1.57117

MINERvA_CC1pi0_XSec_1Dth_antinu_2016_settings

- name : MINERvA_CC1pi0_XSec_1Dth_antinu_2016
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. prepared to the property of the p$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1Dth_antinu sample
- |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubar
- I--> Signal: Any event with 1 muon, 1 pion, no other tracks
- xtitle : θ_{π} (degrees)
- ytitle : $d\sigma/d\theta_{\pi}$) (cm²/nucleon/degree)
- $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$
- $\bullet \ allowed_types: FIX/FULL \\$
- enu_min : 1.5
- enu_max : 10
- title : MINERvA_CC1pi0_XSec_1Dth_antinu
- originalname : MINERvA_CC1pi0_XSec_1Dth_antinu_2016
- χ² : 7.75216 **NDOF** : 11
- $\chi^2/NDOF : 0.704742$

MINERvA_CC1pi0_XSec_1Dth_antinu_fluxcorr_settings

- name: MINERvA_CC1pi0_XSec_1Dth_antinu_fluxcorr
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. prepared to the property of the p$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1Dth_antinu sample
- |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubar
- I--> Signal: Any event with 1 muon, 1 pion, no other tracks
- xtitle : θ_π (degrees)
- ytitle : $d\sigma/d\theta_{\pi}$) (cm²/nucleon/degree)
- $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$
- $\bullet \ allowed_types: FIX/FULL \\$
- enu min: 1.5
- enu_max : 10
- title : MINERvA_CC1pi0_XSec_1Dth_antinu
- originalname : MINERvA_CC1pi0_XSec_1Dth_antinu_fluxcorr
- χ² : 8.74057 **NDOF** : 11
- χ²/NDOF : 0.794597



```
MINERvA_CC1pi0_XSec_1Dth_antinu_2015_fluxcorr_settings
```

- name : MINERvA_CC1pi0_XSec_1Dth_antinu_2015_fluxcorr
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. preparation of the property of th$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1Dth_antinu sample
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubar
- I--> Signal: Any event with 1 muon, 1 pion, no other tracks
- xtitle : θ_{π} (degrees)
- ytitle : $d\sigma/d\theta_{\pi}$) (cm²/nucleon/degree)
- default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
 allowed_types: FIX/FULL
- enu_min: 1.5
- enu_max : 10
- title : MINERvA_CC1pi0_XSec_1Dth_antinu
- originalname : MINERvA_CC1pi0_XSec_1Dth_antinu_2015_fluxcorr
- χ^2 : 14.3668 • NDOF : 11
- χ²/NDOF : 1.30607

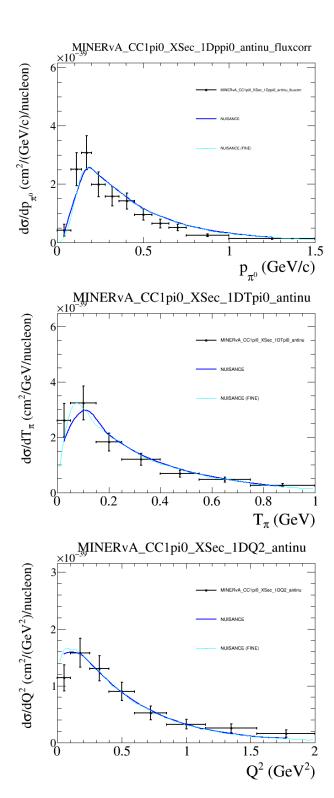
MINERvA_CC1pi0_XSec_1Dth_antinu_2016_fluxcorr_settings

- name : MINERvA_CC1pi0_XSec_1Dth_antinu_2016_fluxcorr
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. preparation of the property of th$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1Dth_antinu sample.
- |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubar
- I--> Signal: Any event with 1 muon, 1 pion, no other tracks
- xtitle : θ_{π} (degrees)
- ytitle : $d\sigma/d\theta_{\pi}$) (cm²/nucleon/degree)
- $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$
- $\bullet \ allowed_types: FIX/FULL \\$
- enu_min : 1.5
- enu_max : 10
- title : MINERvA_CC1pi0_XSec_1Dth_antinu
- $\bullet \ original name: MINERvA_CC1pi0_XSec_1Dth_antinu_2016_fluxcorr \\$
- χ² : 8.74057 **NDOF** : 11
- $\chi^2/NDOF : 0.794597$

MINERvA_CC1pi0_XSec_1Dppi0_antinu_settings

- name: MINERvA_CC1pi0_XSec_1Dppi0_antinu
- $\bullet input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. prepared to the property of the pro$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1Dppi0_antinu sample.
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubar
- I--> Signal: Any event with 1 muon, 1 pion, no other tracks

- xtitle : p_x (GeV/c) ytitle : dσ/dp_{x0} (cm²/(GeV/c)/nucleon) default_types : FIX,FREE,SHAPE/DIAG/NORM/MASK
- $\bullet \ allowed_types: FIX/DIAG$ • enu min: 1.5
- enu_max : 10
- title : MINERvA_CC1pi0_XSec_1Dppi0_antinu
- originalname : MINERvA_CC1pi0_XSec_1Dppi0_antinu
- χ² : 41.0959 NDOF : 11
- χ²/NDOF : 3.73599



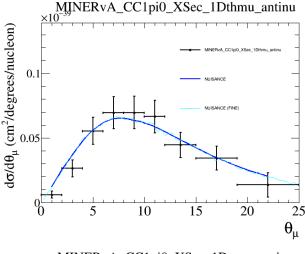
MINERvA_CC1pi0_XSec_1Dppi0_antinu_fluxcorr_settings

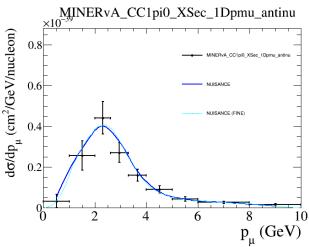
- name : MINERvA_CC1pi0_XSec_1Dppi0_antinu_fluxcorr
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. preparation of the property of t$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1Dppi0_antinu sample.
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubar
- |--> Signal: Any event with 1 muon, 1 pion, no other tracks

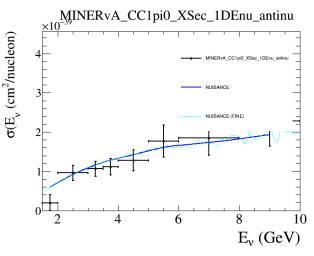
- xtitle: p_{re} (GeV/c) ytitle: dG/dp_{re} (cm²/(GeV/c)/nucleon) default_types: FIX_FREE_SHAPE/DIAG/NORM/MASK
- $\bullet \ allowed_types: FIX/DIAG$
- enu_min: 1.5
- enu_max : 10
- title : MINERvA_CC1pi0_XSec_1Dppi0_antinu
- $\bullet \ original name : MINERvA_CC1pi0_XSec_1Dppi0_antinu_fluxcorr \\$
- χ^2 : 29.9674 • NDOF : 11
- $\chi^2/NDOF$: 2.72431

MINERvA_CC1pi0_XSec_1DTpi0_antinu_settings

- name : MINERvA_CC1pi0_XSec_1DTpi0_antinu
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. preparation of the property of th$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1DTpi0_antinu sample.
- |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubar
- I--> Signal: Any event with 1 muon, 1 pion, no other tracks
- xtitle : T_{π} (GeV)
- ytitle : $d\sigma/dT_{\pi}$ (cm²/GeV/nucleon)
- $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$
- $\bullet \ allowed_types: FIX/FULL \\$
- enu_min : 1.5
- enu_max : 10
- $\bullet \ title : MINERvA_CC1pi0_XSec_1DTpi0_antinu \\$
- originalname : MINERvA_CC1pi0_XSec_1DTpi0_antinu
- χ^2 : 10.5678 **NDOF**: 7
- $\chi^2/NDOF$: 1.50969
- MINERvA_CC1pi0_XSec_1DQ2_antinu_settings
- name: MINERvA_CC1pi0_XSec_1DQ2_antinu
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000.2. preparation of the property of the$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1DQ2_antinu sample
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubar
- I--> Signal: Any event with 1 muon, 1 pion, no other tracks
- $\bullet \ \textbf{xtitle} : Q^2 \, (GeV^2)$
- ytitle : $d\sigma/dQ^2$ (cm²/(GeV ²)/nucleon)
- $\bullet \ default_types: FIX, FREE, SHAPE/DIAG/NORM/MASK$
- $\bullet \ allowed_types: FIX/DIAG$ • enu min: 1.5
- enu_max : 10
- title : MINERvA_CC1pi0_XSec_1DQ2_antinu
- originalname : MINERvA_CC1pi0_XSec_1DQ2_antinu
- χ^2 : 10.4201 **NDOF**: 8
- $\chi^2/NDOF$: 1.30251







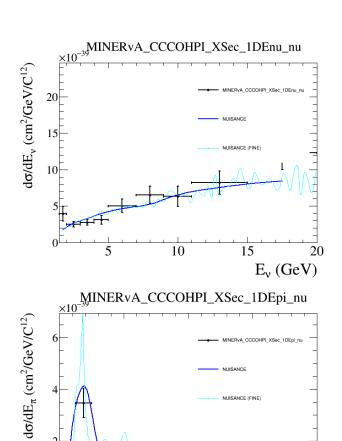
MINERvA_CC1pi0_XSec_1Dthmu_antinu_settings

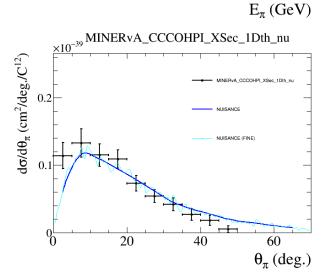
- name : MINERvA_CC1pi0_XSec_1Dthmu_antinu
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. preparation of the property of th$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1Dthmu_antinu sample.
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubar
- |--> Signal: Any event with 1 muon, 1 pion, no other tracks
- ytitle : $d\sigma/d\theta_{\mu}$ (cm²/degrees/nucleon)
- $\bullet \ default_types: FIX, FREE, SHAPE/DIAG/NORM/MASK$
- $\bullet \ allowed_types: FIX/DIAG$
- enu_min: 1.5
- enu_max : 10
- $\bullet \ title : MINERvA_CC1pi0_XSec_1Dthmu_antinu \\$
- originalname : MINERvA_CC1pi0_XSec_1Dthmu_antinu
- χ²: 10.5358 • NDOF : 9
- χ²/NDOF : 1.17064
- MINERvA_CC1pi0_XSec_1Dpmu_antinu_settings
- name : MINERvA_CC1pi0_XSec_1Dpmu_antinu
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. prepared to the property of the p$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1Dpmu_antinu sample.
- |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubarr
- I--> Signal: Any event with 1 muon, 1 pion, no other tracks

- $$\begin{split} &\bullet \text{ xtitle : } p_{\mu}\left(GeV\right) \\ &\bullet \text{ ytitle : } d\sigma/dp_{\mu}\left(cm^{2}/GeV/nucleon\right) \\ &\bullet \text{ default_types : } FIX,FREE,SHAPE/DIAG/NORM/MASK \end{split}$$
- allowed_types : FIX/DIAG
- enu_min : 1.5
- enu_max : 10
- $\bullet \ title : MINERvA_CC1pi0_XSec_1Dpmu_antinu \\$
- originalname : MINERvA_CC1pi0_XSec_1Dpmu_antinu
- χ² : 7.07499 NDOF : 9
- $\chi^2/NDOF : 0.78611$

MINERvA_CC1pi0_XSec_1DEnu_antinu_settings

- name: MINERvA_CC1pi0_XSec_1DEnu_antinu
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. prepared to the property of the p$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1DEnu_antinu sample.
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubar
- I--> Signal: Any event with 1 muon, 1 pion, no other tracks
- $\bullet \ \textbf{xtitle} : E_{_{V}}\left(GeV\right)$
- ytitle : $\sigma(E_v (cm^2/nucleon)$
- $\bullet \ \mathbf{default_types} : FIX, FREE, SHAPE/DIAG/NORM/MASK$
- $\bullet \ allowed_types: FIX/DIAG$ • enu min: 1.5
- enu_max : 10
- title : MINERvA_CC1pi0_XSec_1DEnu_antinu
- originalname : MINERvA_CC1pi0_XSec_1DEnu_antinu
- χ² : 6.15226 NDOF : 8
- χ²/NDOF : 0.769033





MINERvA_CCCOHPI_XSec_1DEnu_nu_settings

- name: MINERvA CCCOHPI XSec 1DEnu nu
- input : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT description :
- |--> MINERvA_CCCOHPI_XSec_1DEnu_nu sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numu |--> Signal: Any event with 1 mu-, 1pi+, and no other FS particles

- signal: Any event wint 1 mar, pre, and no other PS particle

 * stifle: E. (GEV)

 * ytitle: dc/dE_v (m²/GeV/C¹²)

 * dcfault_types: FIX.FREE.SHAPE/DIAG,FULL/NORM/MASK

 * allowed_types: FIX/FULL

- e enu_max : 20
 title : MINERVA_CCCOHPI_XSec_1DEnu_nu
 data : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CCCOHPI_XSec_1DEnu_nu \\$
- NDOF: 9
- χ²/NDOF : 1585.83

MINERvA_CCCOHPI_XSec_1DEpi_nu_settings

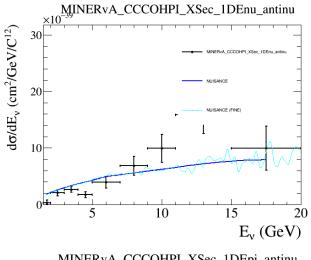
- name : MINERVA_CCCOHPI_XSec_1DEpi_nu
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT description :
- |--> MINERvA_CCCOHPI_XSec_1DEpi_nu sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numu
- 1--> Signal: Any event with 1 mu-, 1pi+, and no other FS particles
- $\bullet \ \textbf{xtitle} : E_{\pi} \, (GeV)$
- ytitle : dσ/dE_π (cm²/GeV/C¹²)
 default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- allowed_types : FIX/FULL enu_min : 1.5

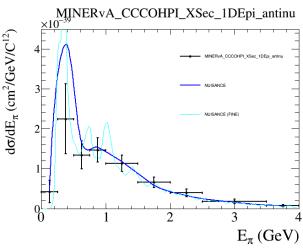
- enu_max : 20 title : MINERvA_CCCOHPI_XSec_1DEpi_nu
- $\bullet \ data: \ / \ data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCCOHPI_XSec_1DEpi_nu
- χ²: -95.0237
- NDOF : 9
- χ²/NDOF : -10.5582

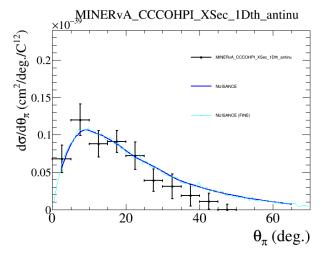
MINERvA_CCCOHPI_XSec_1Dth_nu_settings

- name : MINERvA_CCCOHPI_XSec_1Dth_nu
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- $\bullet \ type : DEFAULT \\$ • description :
- |--> MINERvA_CCCOHPI_XSec_1Dth_nu sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numu
- 1--> Signal: Any event with 1 mu-, 1pi+, and no other FS particles
- xtitle : θ_{π} (deg.)
- $\label{eq:potential} \begin{array}{l} \bullet \mbox{ ytitle : } d\text{G}/d\theta_{\pi} \mbox{ (cm}^2/deg.\text{/C}^{12}) \\ \bullet \mbox{ default_types : } FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK \\ \end{array}$
- allowed_types : FIX/FULL enu_min : 1.5

- enu_max : 20 title : MINERvA_CCCOHPI_XSec_1Dth_nu
- $\bullet \ data: {\it 'data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nations/minerva-validation-061117/builds/nations/minerva-validations/miner$ covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCCOHPI_XSec_1Dth_nu
 χ² : 43.6129
- NDOF: 12
- χ²/NDOF : 3.6344







MINERvA_CCCOHPI_XSec_1DEnu_antinu_settings

- name: MINERvA CCCOHPI XSec 1DEnu antinu
- input : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- type : DEFAULT description :
- |--> MINERvA_CCCOHPI_XSec_1DEnu_antinu sample |--> Target: CH
- |--> Flux: MINERvA Reverse Horn Current numu |--> Signal: Any event with 1 mu+, 1pi-, and no other FS particles
- signal: Any event wint 1 muer, pr., and no other PS particles

 * stifle : E. (GEV)

 * ytitle : dc/dE_v (m²/GeV/C¹²)

 * dcfault_types : FIX.FREE.SHAPE/DIAG,FULL/NORM/MASK

 * allowed_types : FIX/FULL

- enu_max: 20

 title: MINERVA_CCCOHPI_XSec_IDEnu_antinu

 data: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n

 covar: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- originalname : MINERvA_CCCOHPI_XSec_1DEnu_antinu
- NDOF: 9
- χ²/NDOF : 4.43105

MINERvA_CCCOHPI_XSec_1DEpi_antinu_settings

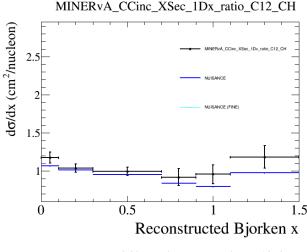
- name : MINERVA_CCCOHPI_XSec_1DEpi_antinu input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- type : DEFAULT
- description : |--> MINERvA_CCCOHPI_XSec_1DEpi_antinu sample. |--> Target: CH
- |--> Flux: MINERvA Reverse Horn Current numu
- I--> Signal: Any event with 1 mu+, 1pi-, and no other FS particles
- xtitle : E_{π} (GeV)
- ytitle : dσ/dE_π (cm²/GeV/C¹²)
 default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- allowed_types : FIX/FULL enu_min : 1.5

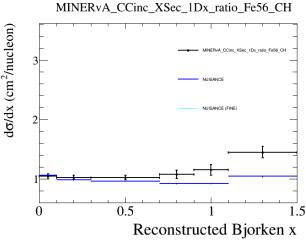
- enu_max : 20
 title : MINERvA_CCCOHPI_XSec_1DEpi_antinu
- data : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
 covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCCOHPI_XSec_1DEpi_antinu
- χ²: 8.19465
- NDOF : 9
- χ²/NDOF : 0.910517

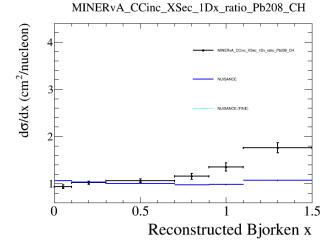
MINERvA_CCCOHPI_XSec_1Dth_antinu_settings

- name : MINERVA_CCCOHPI_XSec_1Dth_antinu
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- $\bullet \ type : DEFAULT \\$ description
- |--> MINERvA_CCCOHPI_XSec_1Dth_antinu sample |--> Target: CH
- |--> Flux: MINERvA Reverse Horn Current numu
- I--> Signal: Any event with 1 mu+, 1pi-, and no other FS particles
- xtitle : θ_{π} (deg.)
- $\label{eq:total_state} \begin{array}{l} \bullet \mbox{ ytitle : } d\sigma \! / d\theta_\pi \mbox{ (cm}^2 \! / deg \slash C^{12}) \\ \bullet \mbox{ default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK} \end{array}$
- allowed_types : FIX/FULL enu_min : 1.5

- enu_max : 20 title : MINERvA_CCCOHPI_XSec_1Dth_antinu
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/lines/minerva-validation-061117/builds/nu$ covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCCOHPI_XSec_1Dth_antinu χ² : 19.2385
- NDOF: 12
- $\chi^2/NDOF$: 1.60321







MINERvA_CCinc_XSec_1Dx_ratio_C12_CH_settings

- name: MINERvA CCinc XSec 1Dx ratio C12 CH
- input : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.C.2500000.5.prepared.r
- type : DEFAULT description :
- |--> MINERvA_CCinc_XSec_1Dx_ratio sample |--> Target: CH

- I--> Flux: MINERvA Forward Horn Current nue + nuebar
 I--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : Reconstructed Bjorken x
 ytitle : dσ/dx (cm²/nucleon)
- default_types : FIX/DIAG,FULL/MASK
- allowed_types : FIX/FULL enu_min : 0

- ent_mar: 20

 title : MINERVA_CCinc_XSec_IDx_ratio

 title : MINERVA_CCinc_XSec_IDx_ratio

 data : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n

 covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- originalname : MINERvA_CCinc_XSec_1Dx_ratio_C12_CH
- NDOF : 6
- χ²/NDOF : 1.23491e+74

MINERvA_CCinc_XSec_1Dx_ratio_Fe56_CH_settings

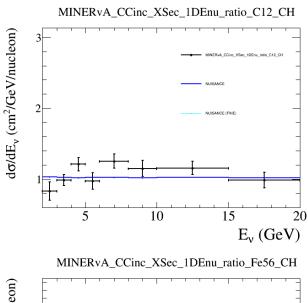
- name : MINERVA_CCinc_XSec_1Dx_ratio_Fe56_CH
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.Fe.2500000.6.prepared:
- type : DEFAULT
- description :
- |--> MINERvA_CCinc_XSec_1Dx_ratio sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- --> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : Reconstructed Bjorken x ytitle : d\u00f3/dx (cm^2/nucleon)
- default_types : FIX/DIAG,FULL/MASK
- allowed_types : FIX/FULL enu_min : 0

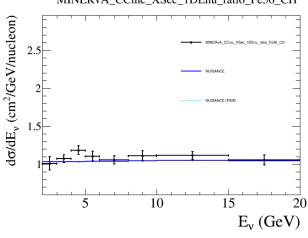
- enu_max : 20 title : MINERvA_CCinc_XSec_1Dx_ratio
- $\bullet \ data: / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/null$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCinc_XSec_1Dx_ratio_Fe56_CH
- χ²: 2.20754e+75
- NDOF : 6
- χ²/NDOF : 3.67923e+74

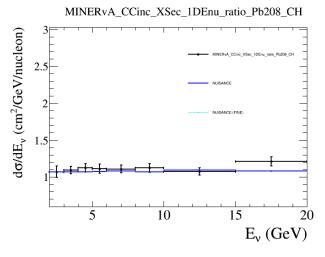
MINERvA_CCinc_XSec_1Dx_ratio_Pb208_CH_settings

- name : MINERvA_CCinc_XSec_1Dx_ratio_Pb208_CH
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.Pb.2500000.7.prepared.
- type : DEFAULT description :
- |--> MINERvA_CCinc_XSec_1Dx_ratio sample. |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : Reconstructed Bjorken x
- ytitle : dσ/dx (cm²/nucleon)
- default_types : FIX/DIAG,FULL/MASK • allowed_types : FIX/FULL • enu_min : 0

- enu_max : 20 title : MINERvA_CCinc_XSec_1Dx_ratio
- data : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
 covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- originalname : MINERvA_CCinc_XSec_1Dx_ratio_Pb208_CH
- χ² : 6.68334e+75
- NDOF : 6
 χ²/NDOF : 1.11389e+75







MINERvA_CCinc_XSec_1DEnu_ratio_C12_CH_settings

- name: MINERvA CCinc XSec 1DEnu ratio C12 CH
- input : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.C.2500000.5.prepared.n
- type : DEFAULT description :

- |--> MINERvA_CCinc_XSec_IDEnu_ratio sample |--> Target: CH
- I--> Flux: MINERvA Forward Horn Current nue + nuebar
 I--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- xtitle : E_v (GeV)
 ytitle : d\u00f3/dE_v (cm²/GeV/nucleon)
 default_types : FIX/DIAG,FULL/MASK

- allowed_types : FIX/FULL

- enu_max: 20

 title: MINERVA_CCinc_XSee_IDEnu_ratio

 data: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n

 covar: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- $\bullet \ original name : MINERvA_CCinc_XSec_1DEnu_ratio_C12_CH \\$
- χ²: 1.87185e+75
- NDOF: 8
- χ²/NDOF : 2.33981e+74

MINERvA_CCinc_XSec_1DEnu_ratio_Fe56_CH_settings

- name : MINERVA_CCinc_XSec_1DEnu_ratio_Fe56_CH
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.Fe.2500000.6.prepared.
- type : DEFAULT
- description :
- |--> MINERvA_CCinc_XSec_IDEnu_ratio sample. |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- $\bullet \ \textbf{xtitle} : E_{_{\! V}}\left(\text{GeV}\right)$
- $\begin{tabular}{ll} \bullet \begin{tabular}{ll} \begin{tabular}{ll} \bullet \begin{tabular}{ll} \begin{tabular}{ll}$
- allowed_types : FIX/FULL enu_min : 0

- enu_max : 20 title : MINERvA_CCinc_XSec_1DEnu_ratio
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/normality/sample_validations/minerva-validation-061117/builds/normality/sample_validations/minerva-validation-061117/builds/normality/sample_validations/minerva-validation-061117/builds/normality/sample_validations/minerva-validation-061117/builds/normality/sample_validations/minerva-validation-061117/builds/normality/sample_validations/minerva-validation-061117/builds/normality/sample_validations/minerva-validation-061117/builds/normality/sample_validations/minerva-validation-061117/builds/normality/sample_validation-061117/builds/normality/$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCinc_XSec_1DEnu_ratio_Fe56_CH
- χ²: 3.20108e+74
- NDOF: 8
- χ²/NDOF : 4.00136e+73

MINERvA_CCinc_XSec_1DEnu_ratio_Pb208_CH_settings

- name : MINERVA_CCinc_XSec_1DEnu_ratio_Pb208_CH
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.Pb.2500000.7.prepared.
- type : DEFAULT description :
- |--> MINERvA_CCinc_XSec_1DEnu_ratio sample. |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- $\bullet \ \textbf{xtitle} : E_v \ (GeV)$
- $\begin{tabular}{ll} \bullet \begin{tabular}{ll} \begin{tabular}{ll} \bullet \begin{tabular}{ll} \begin{tabular}{ll}$
- allowed_types : FIX/FULL enu_min : 0

- enu_max : 20 title : MINERvA_CCinc_XSec_1DEnu_ratio
- $\bullet \ data: {\it 'data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nations/minerva-validation-061117/builds/nations/minerva-validation-061117/builds/nations/minerva-validation-061117/builds/nations/minerva-validation-061117/builds/nations/minerva-validation-061117/builds/nations/minerva-validation-061117/builds/nations/minerva-validation-061117/builds/nations/minerva-validation-061117/builds/nations/minerva-validation-061117/builds/nations/minerva-validation-061117/builds/nations/minerva-validation-061117/builds/nation-061117$ covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCinc_XSec_1DEnu_ratio_Pb208_CH
- χ²: 2.59518e+74 • NDOF: 8
- χ²/NDOF : 3.24398e+73