

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

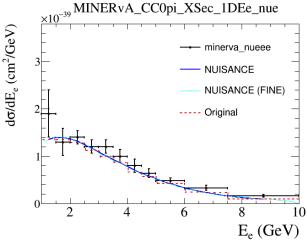
- $\label{eq:controller} \begin{array}{ll} \text{Signal.} & \text{the Cope}_{2E} \text{In clined at the Critical Revolution} \\ \text{• withe} : Q_{0E}^2 \left(\text{GeV}^2\right) \\ \text{• ytithe} : do'/dQ_{0E}^2 \left(\text{cm}^2/\text{GeV}^2\right) \\ \text{• default_types} : \text{FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK} \end{array}$
- allowed_types : FIX/FULL enu_min : 1.5

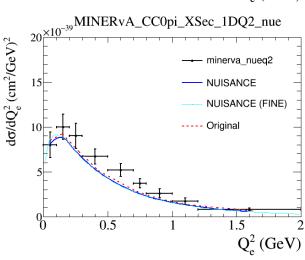
- enu_max : 10 title : MINERvA_CCQE_XSec_1DQ2_antinu
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/nu$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCQE_XSec_1DQ2_antinu
- χ²: 19.9113 • NDOF: 8
- χ²/NDOF : 2.48891

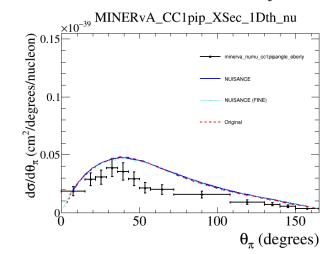
MINERvA_CC0pi_XSec_1DQ2_nu_proton_settings

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

- stitle : Q_{QE}^{c} (GeV²) ytitle : $d\sigma/dQ^{2}$ (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
- 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/
- $\bullet \ original name : MINERvA_CC0pi_XSec_1DQ2_nu_proton \\$
- χ²: 7.63844
- NDOF: 7 • $\chi^2/NDOF$: 1.09121







MINERvA_CC0pi_XSec_1DEe_nue_settings

- name: MINERvA_CC0pi_XSec_1DEe_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 nue Ee 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_c (GeV)
 ytitle : do/dE_c (cm²/GeV)
 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/
- $\bullet \ original name : MINERvA_CC0pi_XSec_1DEe_nue \\$
- 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

- stitle : $Q_e^2(\text{GeV})$ ytitle : $d\sigma/dQ_e^2(\text{cm}^2/\text{GeV})^2$ default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- allowed_types : FIX/FULL enu_min : 0

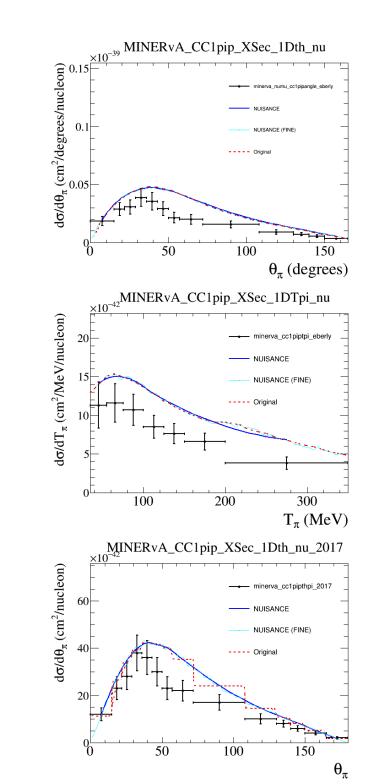
- enu_max : 10 title : MINERvA_CC0pi_XSec_1DQ2_nue
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/nu$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CC0pi_XSec_1DQ2_nue
- χ²: 9.9699 • NDOF : 9
- γ²/NDOF : 1.10777

MINERvA_CC1pip_XSec_1Dth_nu_settings

- name : MINERvA_CC1pip_XSec_1Dth_nu
 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)
- $\label{eq:theta-state} \begin{array}{l} \bullet \mbox{ ytitle : } d\sigma \! / d\theta_\pi \mbox{ (cm}^2 \! / \! degrees \! / \! nucleon) \\ \bullet \mbox{ default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK} \end{array}$
- allowed_types : FIX/FULL enu_min : 1.5

- enu_max : 10 title : MINERvA_CC1pip_XSec_1Dth_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/

- NDOF: 13
- χ²/NDOF : 8.04719



MINERvA_CC1pip_XSec_1Dth_nu_settings

- name : MINERvA_CClpip_XSec_1Dth_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/
- $\bullet \ original name : MINERvA_CC1pip_XSec_1Dth_nu \\$
- NDOF: 13
- χ²/NDOF : 8.04719

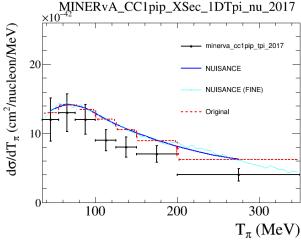
MINERvA_CC1pip_XSec_1DTpi_nu_settings

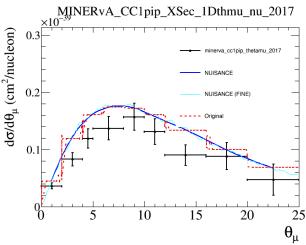
- name : MINERvA_CC1pip_XSec_1DTpi_nu
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT
- description
- |--> MINERvA_CC1pip_XSec_1DTpi_nu sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 1--> Signal: Any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

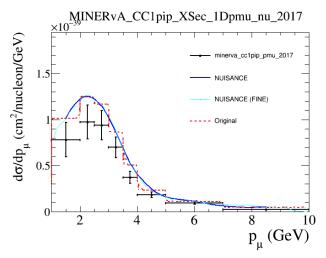
- enu_max : 10 title : MINERvA_CC1pip_XSec_1DTpi_nu
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/nu$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CC1pip_XSec_1DTpi_nu
- χ²: 22.0665
- NDOF: 7
- γ²/NDOF : 3.15236

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
- $\bullet \ default_types: {\tt FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK}$
- 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
- $\bullet \ xtitle: \theta_{\pi}$
- ytitle : dσ/dθ_π (cm²/nucleon)
- originalname : MINERvA_CC1pip_XSec_1Dth_nu_2017
- χ^2 : 82.9066
- NDOF: 14
- $\chi^2/NDOF$: 5.9219







MINERvA_CC1pip_XSec_1DTpi_nu_2017_settings

```
name: MINERVA_CClpip_XSec_lDTpi_nu_2017
input: GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERVA_fhc_numu.CH.2500000.1.prepared
type: DEFAULT
default_types: FIX_FREE_SHAPE/DIAG_FULL/NORM/MASK
allowed_types: FIX_FULL
enu_min: 1.5
enu_max: 10
description:
|-> Target: CH
|-> Flux: MINERVA Forward Horn Current numu ONLY
|-> 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: CClri Updated
xtitle: T_c (MeV)
ytitle: doi/dT_c (cm²/nucleon/MeV)
originalname: MINERVA_CClpip_XSec_1DTpi_nu_2017
```

MINERvA_CC1pip_XSec_1Dthmu_nu_2017_settings

• χ²: 13.5007

• $\chi^2/NDOF$: 1.92868

• NDOF: 7

```
• name : MINERvA_CC1pip_XSec_1Dthmu_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 : \theta_{\mu}

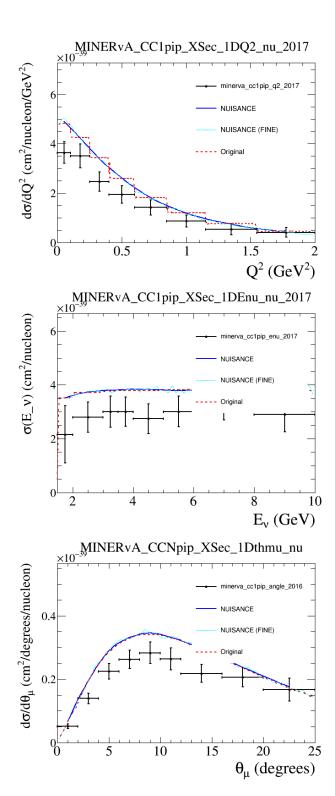
• ytitle : dσ/dθ<sub>μ</sub> (cm²/nucleon)
• originalname : MINERvA_CC1pip_XSec_1Dthmu_nu_2017
• \chi^2: 32.2319
• NDOF: 9
• \chi^2/NDOF : 3.58132
```

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
        |--> 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-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 : p_{\mu} (GeV)
• ytitle : d\sigma/dp_{\mu} (cm<sup>2</sup>/nucleon/GeV)
  • originalname : MINERvA_CC1pip_XSec_1Dpmu_nu_2017
 • \chi^2: 20.458
 • NDOF: 8
 • \chi^2/NDOF : 2.55725
```



```
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
• default_types: FIX_FREE_SHAPE/DIAG_FULL/NORM/MASK
• allowed_types: FIX_FULL
• enu_min: 1.5
• enu_max: 10
• description:
|-> Target: CH
|-> Flux: MINERVA Forward Horn Current numu ONLY
|-> 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: CC2 (cm²/pnucleon/GeV²)
• ytitle: dc3/dQ² (cm²/pnucleon/GeV²)
• originalname: MINERVA_CC1pip_XSec_1DQ2_nu_2017

MINERvA_CC1pip_XSec_1DEnu_nu_2017_settings

• χ^2 : 15.6999

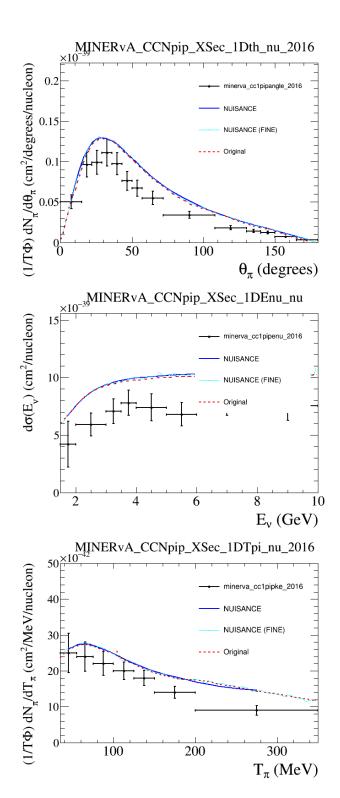
χ²/NDOF: 1.96249

• NDOF: 8

• 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 covar: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/ • title : CC1π Updated • xtitle : E_v (GeV) ytitle : σ(E_v) (cm²/nucleon) • originalname : MINERvA_CC1pip_XSec_1DEnu_nu_2017 • χ^2 : 7.03107 • NDOF: 8 • $\chi^2/NDOF : 0.878883$

$MINERvA_CCNpip_XSec_1Dthmu_nu_settings$

• name : MINERVA_CCNpip_XSec_IDthmu_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_IDthmu_nu sample.
|-> Target: CH
|-> Flux: MINERVA Forward Horn Current nue + nuebar
|-> Signal: Any event with 1 electron, any nucleons, and no other FS particles
• xtitle : θ₁ (degrees)
• ytitle : d∂idθ₂ (cm²/degrees/nucleon)
• default_types : FIX.FREE.SHAPE/DIAG.FULL/NORM/MASK
• allowed_types : FIX.F



MINERvA_CCNpip_XSec_1Dth_nu_2016_settings

- name : MINERvA_CCNpip_XSec_1Dth_nu_2016
- $\bullet input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. CH. 2500000.1. prepared the property of the property$
- 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
- $\bullet \ title: MINERvA_CCNpip_XSec_1Dth_nu \\$
- originalname : MINERvA_CCNpip_XSec_1Dth_nu_2016
- χ^2 : 56.9773 • NDOF : 14
- $\chi^2/NDOF$: 4.06981

MINERvA_CCNpip_XSec_1DEnu_nu_settings

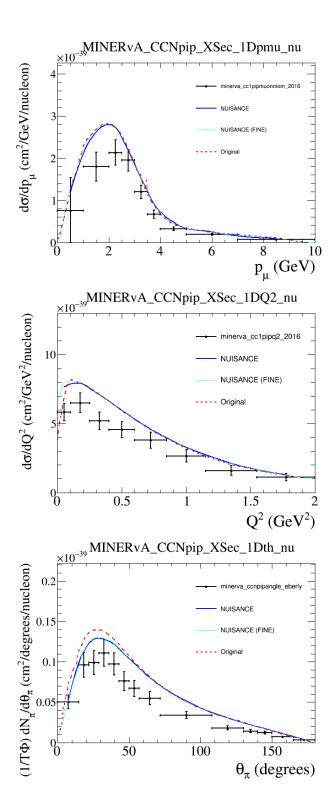
- name : MINERvA_CCNpip_XSec_1DEnu_nu
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT
- description :
- |--> MINERvA_CCNpip_XSec_1DEnu_nu sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- l--> Signal: Any event with 1 electron, any nucleons, and no other FS particles \bullet xtitle : E_v (GeV)

- $\label{eq:state} \begin{array}{l} \bullet \mbox{ ytitle} : d\sigma(E_{_{V}}) \mbox{ (cm}^{2}/\mbox{nucleon)} \\ \bullet \mbox{ default_types} : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK \end{array}$
- 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
- 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_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_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
- $\bullet \ original name: MINERvA_CCNpip_XSec_1DTpi_nu_2016 \\$
- χ^2 : 25.081 **NDOF**: 7
- $\chi^2/NDOF : 3.583$



MINERvA_CCNpip_XSec_1Dpmu_nu_settings

- name : MINERvA_CCNpip_XSec_1Dpmu_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_IDpmu_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 : p_{μ} (GeV) ytitle : $d\sigma/dp_{\mu}$ (cm²/GeV/nucleon) default_types : FIX_FREE_SHAPE/DIAG_FULL/NORM/MASK
- allowed_types : FIX/FULL enu_min : 1.5

- en_max: 10
 title: MINERvA_CCNpip_XSec_1Dpmu_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/ $\bullet \ original name : MINERvA_CCNpip_XSec_1Dpmu_nu \\$
- χ²: 35.7957
- NDOF: 9
- χ²/NDOF : 3.97731

MINERvA_CCNpip_XSec_1DQ2_nu_settings

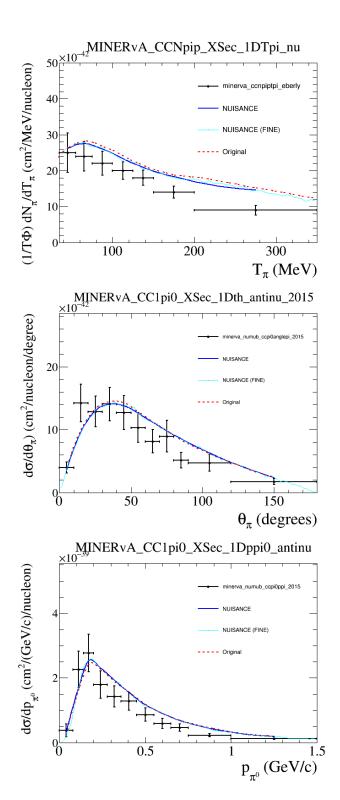
- name : MINERvA_CCNpip_XSec_1DQ2_nu
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT description :
- |--> MINERvA_CCNpip_XSec_1DQ2_nu sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- l--> Signal: Any event with 1 electron, any nucleons, and no other FS particles xtitle : Q^2 (GeV 2) ytitle : $d\sigma/dQ^2$ (cm 2 /GeV 2 /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_1DQ2_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_1DQ2_nu
- χ²: 15.5382
- NDOF : 8 • χ²/NDOF : 1.94227

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.
- 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
- χ²: 56.9773
- NDOF : 14
- χ²/NDOF : 4.06981



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_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
- $\bullet \ title : MINERvA_CCNpip_XSec_1DTpi_nu \\$
- originalname : MINERvA_CCNpip_XSec_1DTpi_nu
- χ^2 : 25.081 • NDOF : 7
- $\chi^2/NDOF : 3.583$

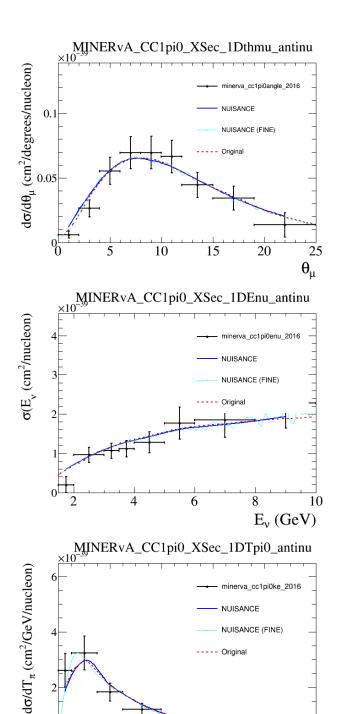
MINERvA_CC1pi0_XSec_1Dth_antinu_2015_settings

- 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.
- |--> 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_2015
- χ²: 17.2829 NDOF: 11
- $\chi^2/NDOF$: 1.57117

MINERvA_CC1pi0_XSec_1Dppi0_antinu_settings

- name: MINERvA_CC1pi0_XSec_1Dppi0_antinu
- $\bullet input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. prepared to the control of the con$
- 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_{rt} (GeV/c) ytitle : do/dp_{rt} (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



 0°

0.2

0.4

0.6

0.8

 T_{π} (GeV)

MINERvA_CC1pi0_XSec_1Dthmu_antinu_settings

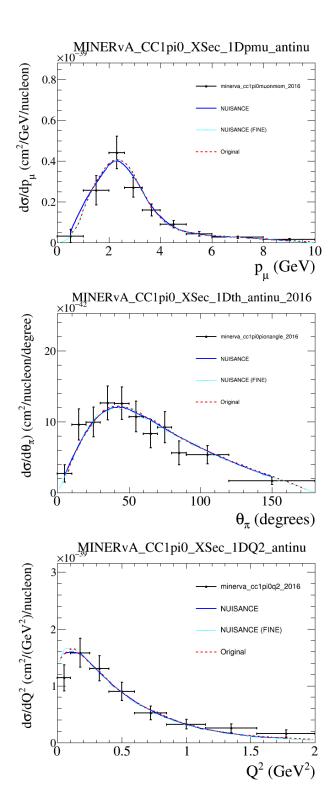
- name : MINERvA_CC1pi0_XSec_1Dthmu_antinu
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. preparation of the property of th$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1Dthmu_antinu sample.
- I--> Target: CH
- |--> Flux: 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)
- $\bullet \ default_types: FIX, FREE, SHAPE/DIAG/NORM/MASK$
- 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_1DEnu_antinu_settings

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

MINERvA_CC1pi0_XSec_1DTpi0_antinu_settings

- name: MINERvA_CC1pi0_XSec_1DTpi0_antinu
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. prepared to the property of the p$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1DTpi0_antinu sample.
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubar
- I--> Signal: Any event with 1 muon, 1 pion, no other tracks
- $\bullet \ \textbf{xtitle} : T_{\pi} \, (GeV)$
- 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
- title : MINERvA_CC1pi0_XSec_1DTpi0_antinu
- originalname : MINERvA_CC1pi0_XSec_1DTpi0_antinu
- χ^2 : 10.5678 NDOF: 7
- χ²/NDOF : 1.50969



MINERvA_CC1pi0_XSec_1Dpmu_antinu_settings

- name : MINERvA_CC1pi0_XSec_1Dpmu_antinu
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. preparation of the property of th$
- type : DEFAULT
- description
- |--> MINERvA_CC1pi0_XSec_1Dpmu_antinu sample.
- I--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numubarr
- I--> Signal: Any event with 1 muon, 1 pion, no other tracks

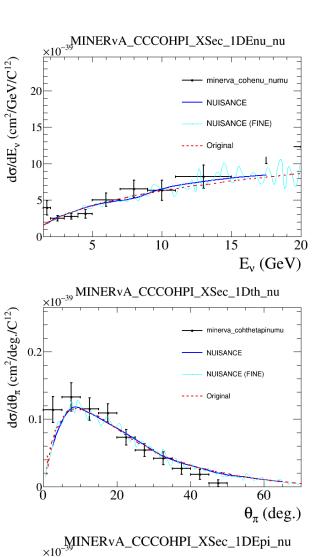
- xtitle : p_n (GeV)
 ytitle : dG/dp_n (cm²/GeV/nucleon)
 default_types : FIX,FREE,SHAPE/DIAG/NORM/MASK
- allowed_types : FIX/DIAG
- enu_min: 1.5
- enu_max : 10
- title : MINERvA_CC1pi0_XSec_1Dpmu_antinu
- originalname : MINERvA_CC1pi0_XSec_1Dpmu_antinu
- χ²: 7.07499
- NDOF : 9 • $\chi^2/NDOF : 0.78611$

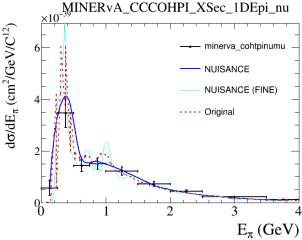
MINERvA_CC1pi0_XSec_1Dth_antinu_2016_settings

- 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)
- $\bullet \ default_types: FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK$
- 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_1DQ2_antinu_settings

- name: MINERvA_CC1pi0_XSec_1DQ2_antinu
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_rhc_numubar. CH. 2500000. 2. prepared to the property of the p$
- 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_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

- en_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/
- originalname : MINERvA_CCCOHPI_XSec_1DEnu_nu
- χ²: 14272.4 • NDOF: 9
- χ²/NDOF : 1585.83

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
- type : DEFAULT description :
- |--> MINERvA_CCCOHPI_XSec_1Dth_nu sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numu
- I--> Signal: Any event with 1 mu-, 1pi+, and no other FS particles
- xtitle : θ_{π} (deg.)
- ytitle : $d\sigma/d\theta_\pi$ (cm²/deg./C¹²) default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- allowed_types : FIX/FULL enu_min : 1.5

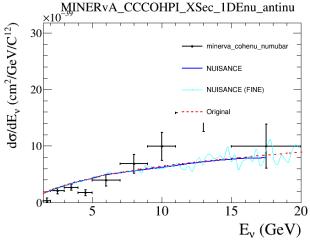
- enu_max : 20 title : MINERvA_CCCOHPI_XSec_1Dth_nu
- data : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
 covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCCOHPI_XSec_1Dth_nu
- χ²: 43.6129 • NDOF: 12
- χ²/NDOF : 3.6344

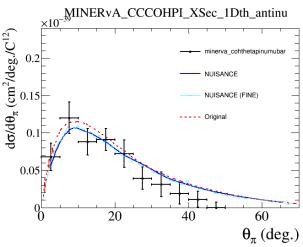
MINERvA_CCCOHPI_XSec_1DEpi_nu_settings

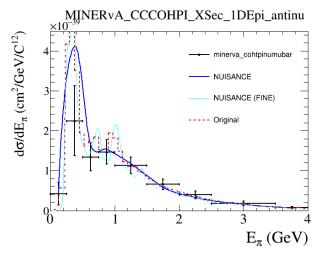
- name : MINERvA_CCCOHPI_XSec_1DEpi_nu
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type : DEFAULT description :
- |--> MINERvA_CCCOHPI_XSec_1DEpi_nu sample |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current numu
- I--> Signal: Any event with 1 mu-, 1pi+, and no other FS particles • xtitle : E_{π} (GeV)

- $\label{eq:continuous} \mbox{ ytitle : $d\sigma/dE_\pi$ (cm^2/GeV/C^{12})$} \\ \mbox{ default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK}$
- allowed_types : FIX/FULL enu_min : 1.5

- enu_max : 20 title : MINERvA_CCCOHPI_XSec_1DEpi_nu
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/lines/minerva-validation-061117/builds/nulled/lines/minerva-validations/minerva-validation-061117/builds/nulled/lines/minerva-validat$ covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CCCOHPI_XSec_1DEpi_nu \\$
- NDOF: 9
- $\chi^2/NDOF$: -10.5582







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

- xtitle : E_V (GeV) ytitle : dσ/dE_V (cm²/GeV/C¹²) default_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_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
- 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.)
- ytitle : $d\sigma/d\theta_\pi$ (cm²/deg./C¹²) default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- allowed_types : FIX/FULL enu_min : 1.5

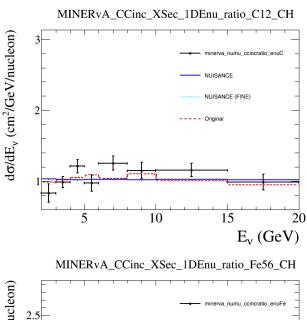
- enu_max : 20 title : MINERvA_CCCOHPI_XSec_1Dth_antinu
- $\bullet \ data: \\ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled (b) \\ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled (b) \\ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled (c) \\ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled (c) \\ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled (c) \\ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled (c) \\ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validation-061117/builds/nulled (c) \\ / data/stowell/NIWG/NUISANCEMC/minerva-validation-061117/builds/nulled (c) \\ / data/stowell/NIWG/NUISANCEMC/minerva-vali$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCCOHPI_XSec_1Dth_antinu
- χ²: 19.2385
- NDOF: 12 • γ²/NDOF : 1.60321

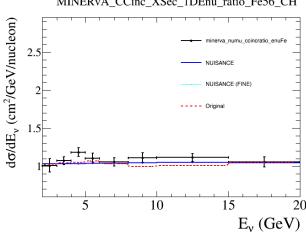
MINERvA_CCCOHPI_XSec_1DEpi_antinu_settings

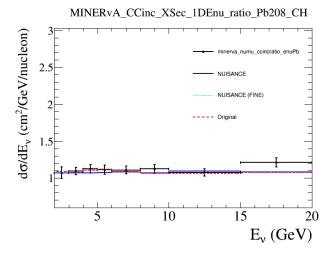
- name : MINERVA_CCCOHPI_XSec_1DEpi_antinu input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- $\bullet \ type : DEFAULT \\$ description
- |--> MINERvA_CCCOHPI_XSec_1DEpi_antinu sample. |--> Target: CH
- |--> Flux: MINERvA Reverse Horn Current numu
- I--> Signal: Any event with 1 mu+, 1pi-, and no other FS particles • xtitle : E_{π} (GeV)

- $\label{eq:continuous} \mbox{ ytitle : $d\sigma/dE_\pi$ (cm^2/GeV/C^{12})$} \\ \mbox{ default_types : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK}$
- 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
- NDOF: 9
- χ²/NDOF : 0.910517







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_min: 0
 enu_max: 20
 ettite: MINERVA_CCinc_XSec_1DEnu_ratio
 ettite: MINERVA_CCinc_XSec_1DEnu_ratio
 etata: //data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
 ecovar: //data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n

 NIVERIAL COMM VS. NIVERM color VS. NIVERM color COMM VS. NIVERM color Color C
- $\bullet \ original name : MINERvA_CCinc_XSec_1DEnu_ratio_C12_CH \\$
- NDOF: 8
- χ²/NDOF : 2.09186

MINERvA_CCinc_XSec_1DEnu_ratio_Fe56_CH_settings

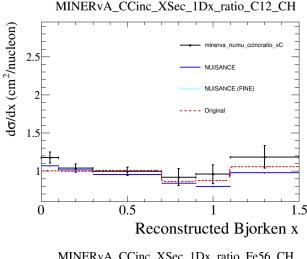
- name : MINERVA_CCinc_XSec_1DEnu_ratio_Fe56_CH
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.Fe.2500000.6.prepared.
- type : DEFAULT
- description :
- |--> MINERvA_CCinc_XSec_IDEnu_ratio sample. |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- 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

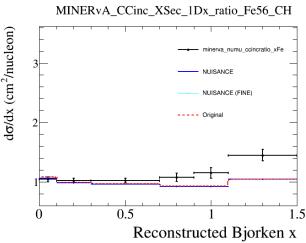
- enu_max : 20 title : MINERvA_CCinc_XSec_1DEnu_ratio
- $\bullet \ data: \textit{/data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nample_validations/minerva-validation-061117/builds/nample_validations/minerva-validation-061117/builds/nample_validations/minerva-validation-061117/builds/nample_validations/minerva-validation-061117/builds/nample_validations/minerva-validation-061117/builds/nample_validations/minerva-validation-061117/builds/nample_validations/minerva-validation-061117/builds/nample_validations/minerva-validation-061117/builds/nample_validations/minerva-validation-061117/builds/nample_validation-061117/bu$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname: MINERvA_CCinc_XSec_1DEnu_ratio_Fe56_CH
- χ²: 9.56659
- NDOF : 8
- γ²/NDOF : 1.19582

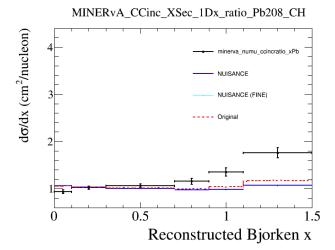
MINERvA_CCinc_XSec_1DEnu_ratio_Pb208_CH_settings

- 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
- $\bullet \ data: / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/nul$ covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- $\bullet \ original name : MINERvA_CCinc_XSec_1DEnu_ratio_Pb208_CH \\$
- NDOF: 8
- $\chi^2/NDOF : 0.898321$







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

- enu_min: 0
 enu_max: 20
 ettide: MiNERvA_CCinc_XSec_1Dx_ratio

 ettide: 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

 NIVERING COMP XSeq. 1Dv. ettic, C12, CH

 NIVERING
- originalname : MINERvA_CCinc_XSec_1Dx_ratio_C12_CH
- NDOF : 6
- $\chi^2/NDOF : 0.823606$

MINERvA_CCinc_XSec_1Dx_ratio_Fe56_CH_settings

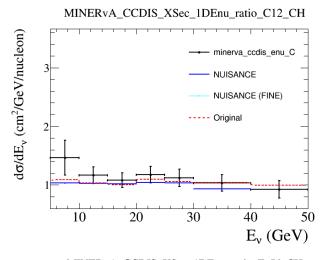
- name : MINERVA_CCinc_XSec_1Dx_ratio_Fe56_CH
 input : GENIE:@GENIE_DIR/gntp.R-2_6_3.0fficialDefault.Default.MINERvA_fhc_numu.Fe.2500000.6.prepared:
- type : DEFAULT
- description :
- |--> MINERvA_CCinc_XSec_1Dx_ratio sample. |--> Target: CH
- |--> Flux: MINERvA Forward Horn Current nue + nuebar
- --> 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

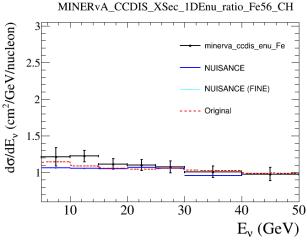
- enu_max : 20 title : MINERvA_CCinc_XSec_1Dx_ratio
- $\bullet \ data: \ / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/nulled/nu$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCinc_XSec_1Dx_ratio_Fe56_CH
- NDOF : 6
- χ²/NDOF : 4.46431

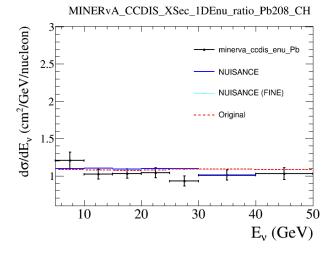
MINERvA_CCinc_XSec_1Dx_ratio_Pb208_CH_settings

- 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
- NDOF : 6
- χ²/NDOF : 14.2413







MINERvA_CCDIS_XSec_1DEnu_ratio_C12_CH_settings

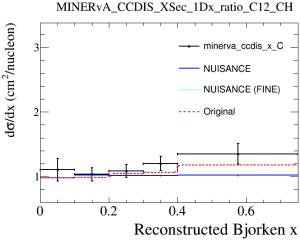
- name : MINERvA_CCDIS_XSec_1DEnu_ratio_C12_CH
- type : DEFAULT
- description : MINERvA_CCDIS_XSec_1DEnu_ratio sample.
- xtitle : E_v (GeV)
- ytitle : do/dE, (cm²/GeV/nucleon)
- $\bullet \ \mathbf{default_types} : FIX/DIAG, FULL/MASK$
- $\bullet \ allowed_types: FIX/FULL \\$
- enu_min : 5
- enu_max : 50
- title : MINERvA_CCDIS_XSec_1DEnu_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/
- originalname : MINERvA_CCDIS_XSec_1DEnu_ratio_C12_CH
- $\bullet \ \chi^2: 44.9596$
- NDOF : 7
- χ²/NDOF : 6.4228

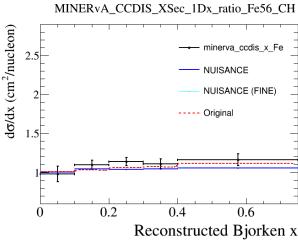
MINERvA_CCDIS_XSec_1DEnu_ratio_Fe56_CH_settings

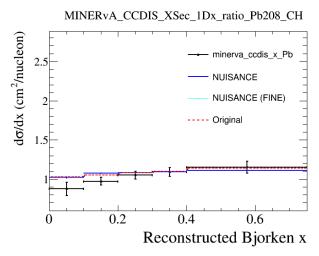
- name : MINERvA_CCDIS_XSec_1DEnu_ratio_Fe56_CH
- $\bullet input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. Fe. 2500000. 6. prepared in the property of the prope$
- type : DEFAULT
- description: MINERvA_CCDIS_XSec_1DEnu_ratio sample.
- xtitle : E, (GeV)
- ytitle : $d\sigma/dE_{\nu}$ (cm²/GeV/nucleon)
- $\bullet \ default_types: FIX/DIAG, FULL/MASK$
- allowed_types : FIX/FULL
- enu_min : 5
- enu_max : 50
- title : MINERvA_CCDIS_XSec_1DEnu_ratio
- $\bullet \ data: \ 'data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/normalization-061117/builds/nor$
- covar: /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCDIS_XSec_1DEnu_ratio_Fe56_CH
- χ^2 : 150.301
- NDOF : 7
- χ²/NDOF : 21.4716

MINERvA_CCDIS_XSec_1DEnu_ratio_Pb208_CH_settings

- name : MINERvA_CCDIS_XSec_1DEnu_ratio_Pb208_CH
- $\bullet input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. Pb. 2500000.7. prepared. The property of the property$
- $\bullet \ type : DEFAULT$
- description: MINERvA_CCDIS_XSec_1DEnu_ratio sample.
- $\bullet \ \textbf{xtitle} : E_{_{V}}\left(GeV\right)$
- ytitle : $d\sigma/dE_v$ (cm²/GeV/nucleon)
- default_types : FIX/DIAG,FULL/MASK
- $\bullet \ allowed_types: FIX/FULL$
- enu_min : 5
- enu_max : 50
- $\bullet \ title: MINERvA_CCDIS_XSec_1DEnu_ratio \\$
- $\bullet \ data: / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/minerva-validation-06$
- covar:/data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
 originalname: MINERvA_CCDIS_XSec_1DEnu_ratio_Pb208_CH
- χ²: 226.24
- NDOF : 7
- χ²/NDOF : 32.3199







MINERvA_CCDIS_XSec_1Dx_ratio_C12_CH_settings

- name : MINERvA_CCDIS_XSec_1Dx_ratio_C12_CH
- type : DEFAULT
- description : MINERvA_CCDIS_XSec_1Dx_ratio sample.
- xtitle : Reconstructed Bjorken x
- ytitle : dσ/dx (cm²/nucleon)
- $\bullet \ \mathbf{default_types} : FIX/DIAG, FULL/MASK$
- allowed_types : FIX/FULL
- enu_min : 5
- enu_max : 50
- title : MINERvA_CCDIS_XSec_1Dx_ratio
- $\bullet \ data: / data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/normalized for the property of t$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCDIS_XSec_1Dx_ratio_C12_CH
- χ^2 : 5.98521
- NDOF : 5
- χ²/NDOF : 1.19704

MINERvA_CCDIS_XSec_1Dx_ratio_Fe56_CH_settings

- name : MINERvA_CCDIS_XSec_1Dx_ratio_Fe56_CH
- $\bullet input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. Fe. 2500000. 6. prepared in the property of the proper$
- type : DEFAULT
- description : MINERvA_CCDIS_XSec_1Dx_ratio sample.
- xtitle : Reconstructed Bjorken x
- ytitle : dσ/dx (cm²/nucleon)
- $\bullet \ default_types: FIX/DIAG, FULL/MASK$
- $\bullet \ allowed_types: FIX/FULL$
- enu_min : :
- enu_max : 50
- title : MINERvA_CCDIS_XSec_1Dx_ratio
- $\bullet \ data: \ 'data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/normalization-061117/builds/nor$
- covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- originalname : MINERvA_CCDIS_XSec_1Dx_ratio_Fe56_CH
- χ^2 : 5.39085
- NDOF : 5
- χ²/NDOF : 1.07817

MINERvA_CCDIS_XSec_1Dx_ratio_Pb208_CH_settings

- name: MINERvA_CCDIS_XSec_1Dx_ratio_Pb208_CH
- $\bullet \ input: GENIE: @GENIE_DIR/gntp.R-2_6_3. Official Default. Default. MINERvA_fhc_numu. Pb. 2500000.7. prepared. The property of the propert$
- type : DEFAULT
- description : MINERvA_CCDIS_XSec_1Dx_ratio sample.
- xtitle : Reconstructed Bjorken x
- ytitle : dσ/dx (cm²/nucleon)
- default_types : FIX/DIAG,FULL/MASK
- $\bullet \ allowed_types: FIX/FULL$
- enu_min : 5
- enu_max : 50
- title : MINERvA_CCDIS_XSec_1Dx_ratio
- $\bullet \ data : \ '/data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/minerva-validations/minerva-validation-061117/builds/minerva-validations/minerva-validation-061117/builds/minerva-val$
- covar:/data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
 originalname: MINERvA_CCDIS_XSec_1Dx_ratio_Pb208_CH
- χ²: 7.2819
- NDOF : 5
- χ²/NDOF : 1.45638