MINERvA_CCQE_XSec_1DQ2_nu

- minerva_numu_ccqe
- NUISANCE
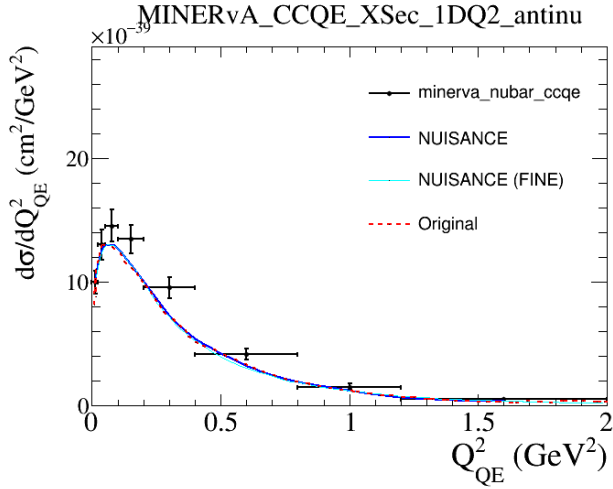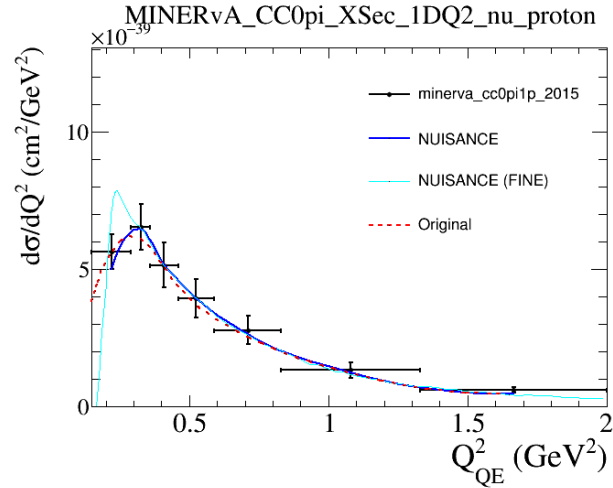- NUISANCE (FINE)
- Original

MINERvA_CCQE_XSec_1DQ2_nu_settings

- **name** : MINERvA_CCQE_XSec_1DQ2_nu
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.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
  |--> Signal: True CCQE/2p2h defined at the vertex level
- **xtitle** : Q_{QE}^2 (GeV^2)
- **ytitle** : $d\sigma/dQ_{QE}^2$ (cm^2/GeV^2)
- **default_types** : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- **allowed_types** : FIX/FULL
- **enu_min** : 1.5
- **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/
- **originalname** : MINERvA_CCQE_XSec_1DQ2_nu
- **χ^2** : 19.3218
- **NDOF** : 8
- **χ^2/NDOF** : 2.41522

MINERvA_CCQE_XSec_1DQ2_antinu

- minerva_nubar_ccqe
- NUISANCE
- NUISANCE (FINE)
- Original

MINERvA_CCQE_XSec_1DQ2_antinu_settings

- **name** : MINERvA_CCQE_XSec_1DQ2_antinu
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.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
  |--> Signal: True CCQE/2p2h defined at the vertex level
- **xtitle** : Q_{QE}^2 (GeV^2)
- **ytitle** : $d\sigma/dQ_{QE}^2$ (cm^2/GeV^2)
- **default_types** : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- **allowed_types** : FIX/FULL
- **enu_min** : 1.5
- **enu_max** : 10
- **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/
- **originalname** : MINERvA_CCQE_XSec_1DQ2_antinu
- **χ^2** : 19.9113
- **NDOF** : 8
- **χ^2/NDOF** : 2.48891

MINERvA_CC0pi_XSec_1DQ2_nu_proton

- minerva_cc0pi1p_2015
- NUISANCE
- NUISANCE (FINE)
- Original

MINERvA_CC0pi_XSec_1DQ2_nu_proton_settings

- **name** : MINERvA_CC0pi_XSec_1DQ2_nu_proton
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.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 + nuebar
  |--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- **xtitle** : Q_{QE}^2 (GeV^2)
- **ytitle** : $d\sigma/dQ^2$ (cm^2/GeV^2)
- **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/
- **originalname** : MINERvA_CC0pi_XSec_1DQ2_nu_proton
- **χ^2** : 7.63844
- **NDOF** : 7
- **χ^2/NDOF** : 1.09121
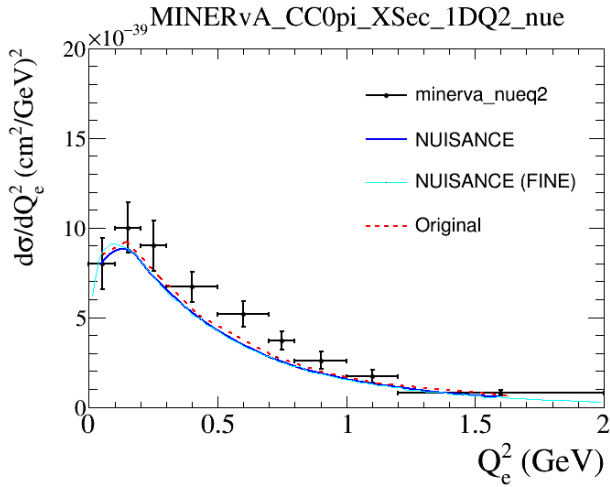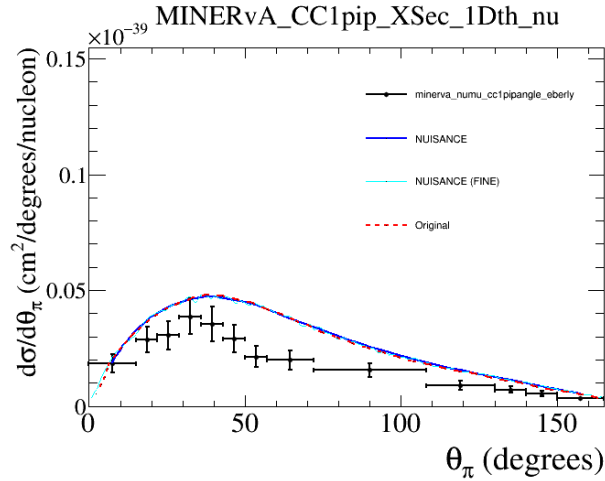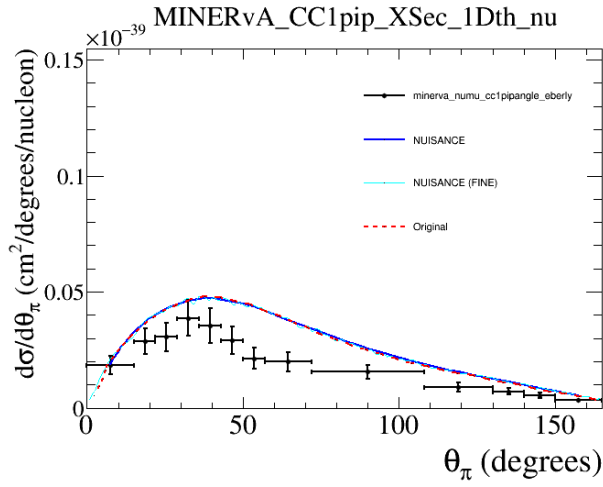
MINERvA_CC0pi_XSec_1DEe_nue
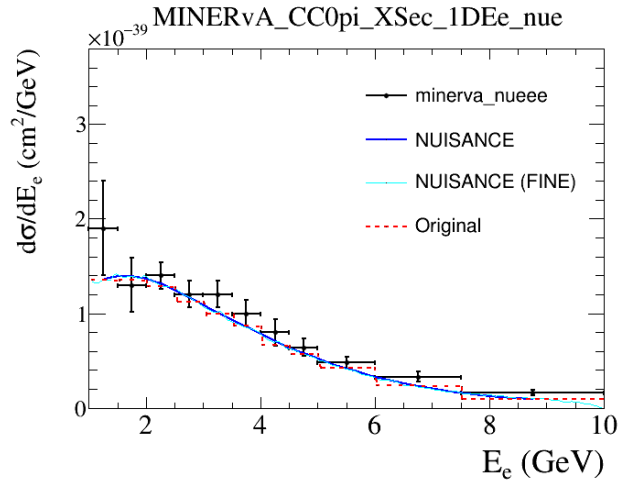
MINERvA_CC0pi_XSec_1DEe_nue_settings

- **name** : MINERvA_CC0pi_XSec_1DEe_nue
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_nue.CH.2500000.3.prepared.r
- **type** : DEFAULT
- **description** :
  |--> MINERvA CC0pi nue Ee sample.
  |--> Target: CH
  |--> Flux: MINERvA Forward Horn Current nue + nuebar
  |--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- **xtitle** : E_e (GeV)
- **ytitle** : $d\sigma/dE_e$ (cm^2/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/
- **originalname** : MINERvA_CC0pi_XSec_1DEe_nue
- **χ^2** : 9.5264
- **NDOF** : 11
- **χ^2/NDOF** : 0.866036

MINERvA_CC0pi_XSec_1DQ2_nue

MINERvA_CC0pi_XSec_1DQ2_nue_settings

- **name** : MINERvA_CC0pi_XSec_1DQ2_nue
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_nue.CH.2500000.3.prepared.r
- **type** : DEFAULT
- **description** :
  |--> MINERvA_CC0pi_XSec_1DQ2_nue sample.
  |--> Target: CH
  |--> Flux: MINERvA Forward Horn Current nue + nuebar
  |--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- **xtitle** : Q_e^2 (GeV)
- **ytitle** : $d\sigma/dQ_e^2$ $(cm^2/GeV)^2$
- **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
- **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_CC0pi_XSec_1DQ2_nue
- **χ^2** : 9.9699
- **NDOF** : 9
- **χ^2/NDOF** : 1.10777

MINERvA_CC1pip_XSec_1Dth_nu

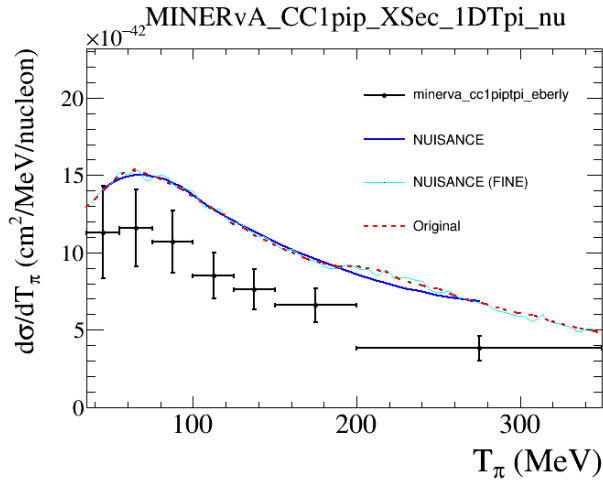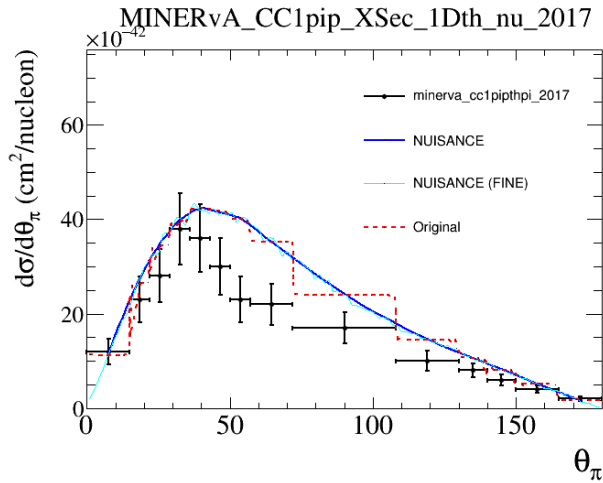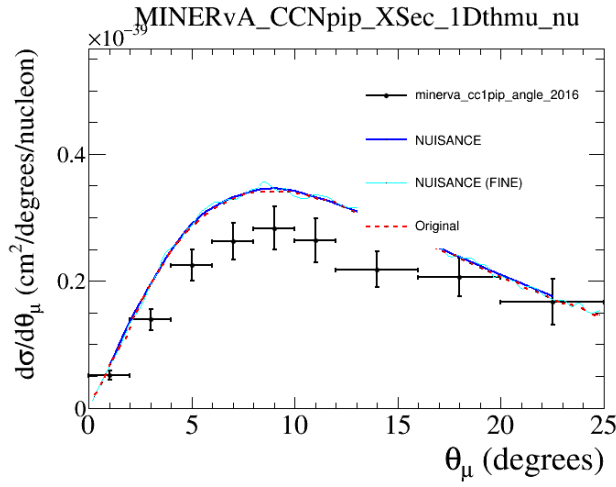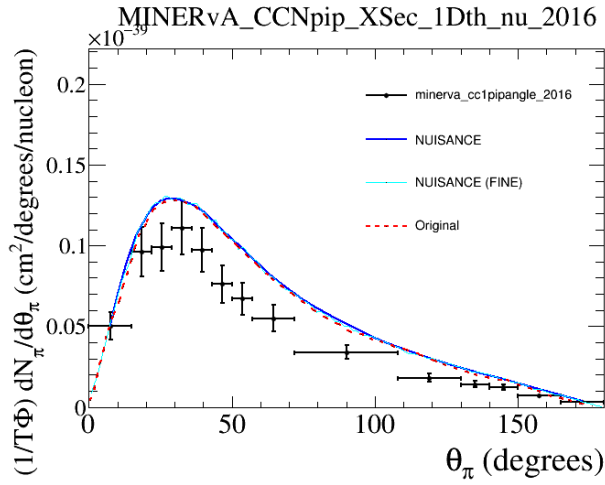MINERvA_CC1pip_XSec_1Dth_nu_settings

- **name** : MINERvA_CC1pip_XSec_1Dth_nu
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.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
  |--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- **xtitle** : θ_π (degrees)
- **ytitle** : $d\sigma/d\theta_\pi$ $(cm^2/degrees/nucleon)$
- **default_types** : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- **allowed_types** : FIX/FULL
- **enu_min** : 1.5
- **enu_max** : 10
- **title** : MINERvA_CC1pip_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_CC1pip_XSec_1Dth_nu
- **χ^2** : 104.614
- **NDOF** : 13
- **χ^2/NDOF** : 8.04719

MINERvA_CC1pip_XSec_1Dth_nu

MINERvA_CC1pip_XSec_1DTpi_nu

MINERvA_CC1pip_XSec_1Dth_nu_2017

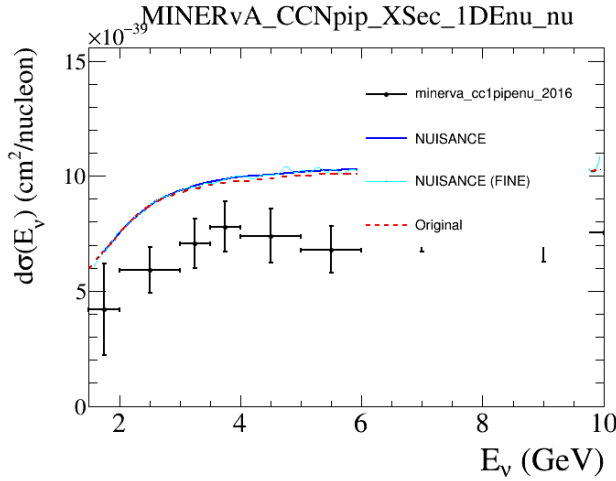## MINERvA_CCNpip_XSec_1Dthmu_nu

MINERvA_CCNpip_XSec_1Dthmu_nu_settings

- **name** : MINERvA_CCNpip_XSec_1Dthmu_nu
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- **type** : DEFAULT
- **description** :
  |--> MINERvA_CCNpip_XSec_1Dthmu_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** : θ_μ (degrees)
- **ytitle** : $d\sigma/d\theta_\mu$ (cm^2/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
- χ^2 : 20.3228
- **NDOF** : 9
- χ^2/**NDOF** : 2.25809
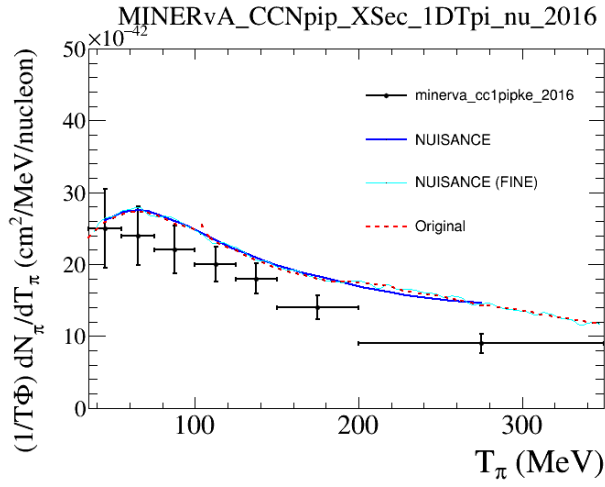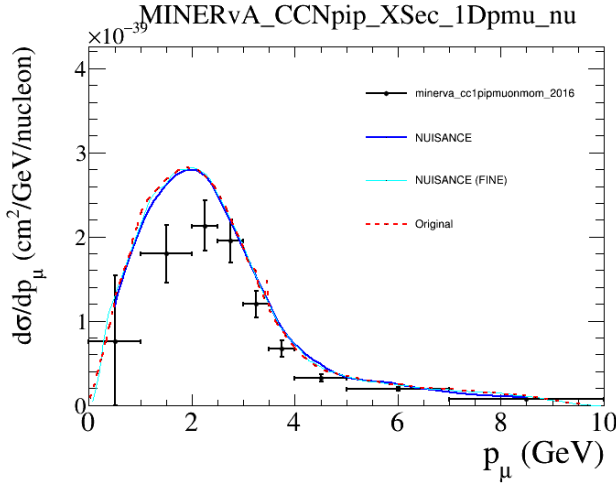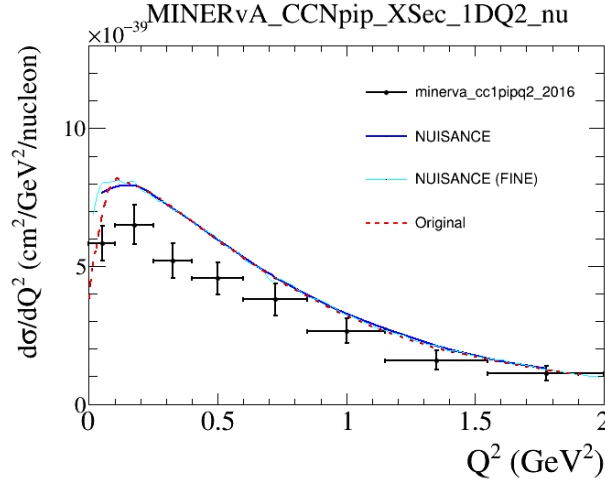
MINERvA_CCNpip_XSec_1Dth_nu_2016

MINERvA_CCNpip_XSec_1Dth_nu_2016_settings

- **name** : MINERvA_CCNpip_XSec_1Dth_nu_2016
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- **type** : DEFAULT
- **description** :
  |--> MINERvA_CCNpip_XSec_1Dth_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** : 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
- **title** : MINERvA_CCNpip_XSec_1Dth_nu
- **originalname** : MINERvA_CCNpip_XSec_1Dth_nu_2016
- χ^2 : 56.9773
- **NDOF** : 14
- χ^2/**NDOF** : 4.06981
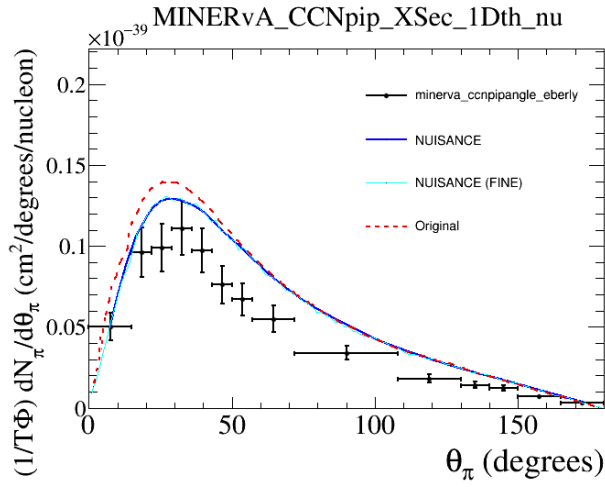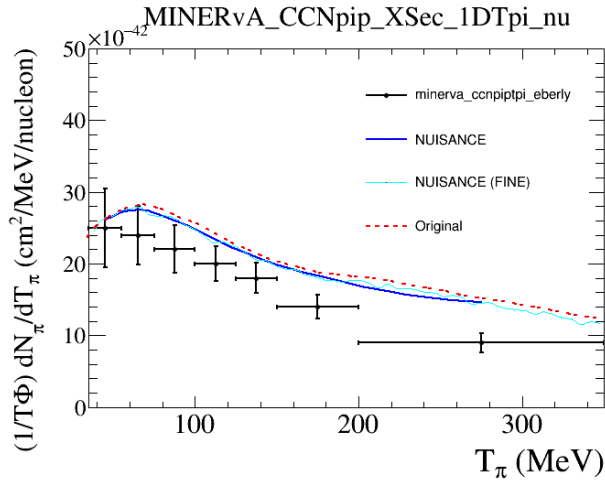
MINERvA_CCNpip_XSec_1DEnu_nu

MINERvA_CCNpip_XSec_1DEnu_nu_settings

- **name** : MINERvA_CCNpip_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_CCNpip_XSec_1DEnu_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** : E_ν (GeV)
- **ytitle** : $d\sigma(E_\nu)$ (cm^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_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_CCNpip_XSec_1DEnu_nu
- χ^2 : 19.1013
- **NDOF** : 8
- χ^2/**NDOF** : 2.38766

MINERvA_CCNpip_XSec_1DTpi_nu_2016

MINERvA_CCNpip_XSec_1Dpmu_nu

MINERvA_CCNpip_XSec_1DQ2_nu

5

MINERvA_CCNpip_XSec_1Dth_nu

MINERvA_CCNpip_XSec_1DTpi_nu

MINERvA_CC1pi0_XSec_1Dth_antinu_2015
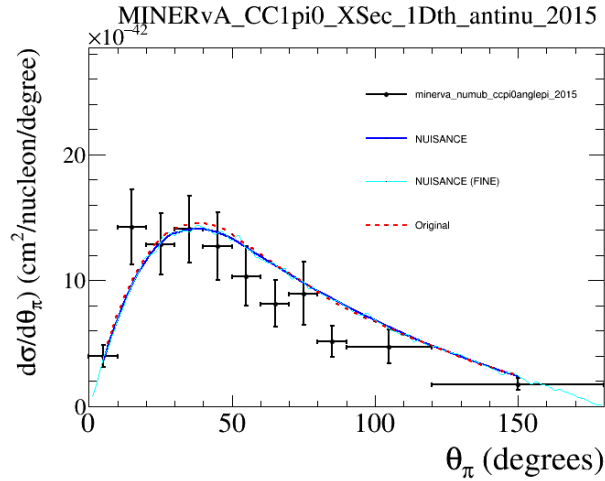
MINERvA_CC1pi0_XSec_1Dppi0_antinu

MINERvA_CC1pi0_XSec_1Dppi0_antinu_settings

- **name** : MINERvA_CC1pi0_XSec_1Dppi0_antinu
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- **type** : DEFAULT
- **description** :
  |--> MINERvA_CC1pi0_XSec_1Dppi0_antinu sample.
  |--> Target: CH
  |--> Flux: MINERvA Forward Horn Current numubar
  |--> Signal: Any event with 1 muon, 1 pion, no other tracks
- **xtitle** : p_{π^0} (GeV/c)
- **ytitle** : $d\sigma/dp_{\pi^0}$ (cm^2/(GeV/c)/nucleon)
- **default_types** : FIX,FREE,SHAPE/DIAG/NORM/MASK
- **allowed_types** : FIX/DIAG
- **enu_min** : 1.5
- **enu_max** : 10
- **title** : MINERvA_CC1pi0_XSec_1Dppi0_antinu
- **originalname** : MINERvA_CC1pi0_XSec_1Dppi0_antinu
- **χ^2** : 41.0959
- **NDOF** : 11
- **χ^2/NDOF** : 3.73599
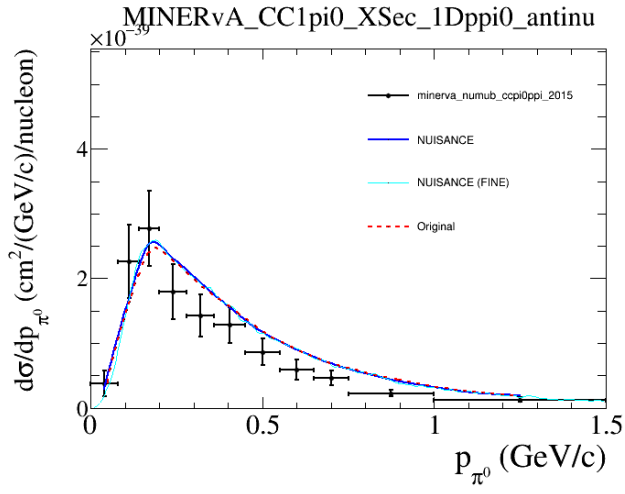
MINERvA_CC1pi0_XSec_1Dthmu_antinu

MINERvA_CC1pi0_XSec_1Dthmu_antinu_settings

- **name** : MINERvA_CC1pi0_XSec_1Dthmu_antinu
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- **type** : DEFAULT
- **description** :
  |--> MINERvA_CC1pi0_XSec_1Dthmu_antinu sample.
  |--> Target: CH
  |--> Flux: MINERvA Forward Horn Current numubar
  |--> Signal: Any event with 1 muon, 1 pion, no other tracks
- **xtitle** : θ_μ
- **ytitle** : $d\sigma/d\theta_\mu$ (cm^2/degrees/nucleon)
- **default_types** : FIX,FREE,SHAPE/DIAG/NORM/MASK
- **allowed_types** : FIX/DIAG
- **enu_min** : 1.5
- **enu_max** : 10
- **title** : MINERvA_CC1pi0_XSec_1Dthmu_antinu
- **originalname** : MINERvA_CC1pi0_XSec_1Dthmu_antinu
- **χ^2** : 10.5358
- **NDOF** : 9
- **χ^2/NDOF** : 1.17064

MINERvA_CC1pi0_XSec_1DEnu_antinu
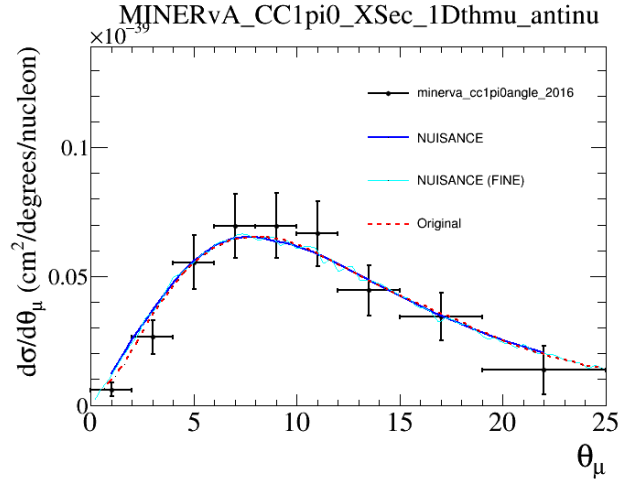
MINERvA_CC1pi0_XSec_1DEnu_antinu_settings

- **name** : MINERvA_CC1pi0_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_CC1pi0_XSec_1DEnu_antinu sample.
  |--> Target: CH
  |--> Flux: MINERvA Forward Horn Current numubar
  |--> Signal: Any event with 1 muon, 1 pion, no other tracks
- **xtitle** : E_ν (GeV)
- **ytitle** : $\sigma(E_\nu$ (cm^2/nucleon)
- **default_types** : FIX,FREE,SHAPE/DIAG/NORM/MASK
- **allowed_types** : FIX/DIAG
- **enu_min** : 1.5
- **enu_max** : 10
- **title** : MINERvA_CC1pi0_XSec_1DEnu_antinu
- **originalname** : MINERvA_CC1pi0_XSec_1DEnu_antinu
- **χ^2** : 6.15226
- **NDOF** : 8
- **χ^2/NDOF** : 0.769033

MINERvA_CC1pi0_XSec_1DTpi0_antinu
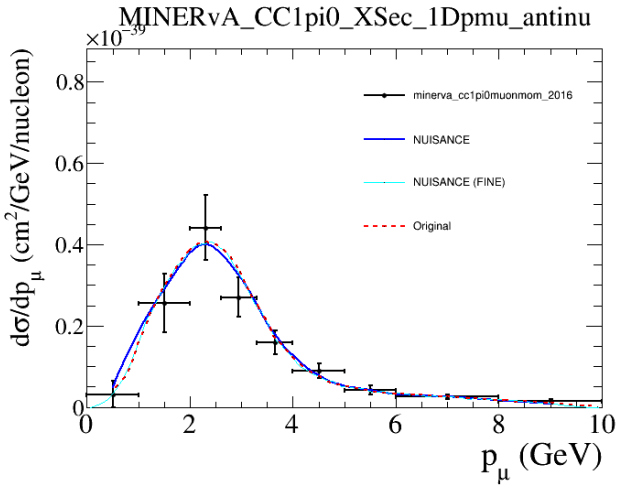
MINERvA_CC1pi0_XSec_1Dpmu_antinu

MINERvA_CC1pi0_XSec_1Dth_antinu_2016

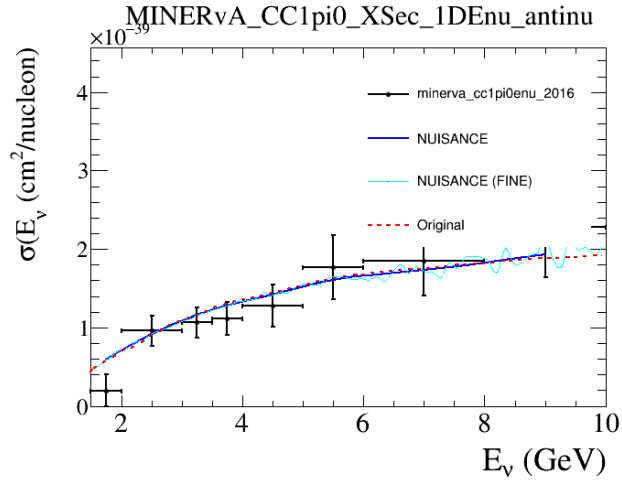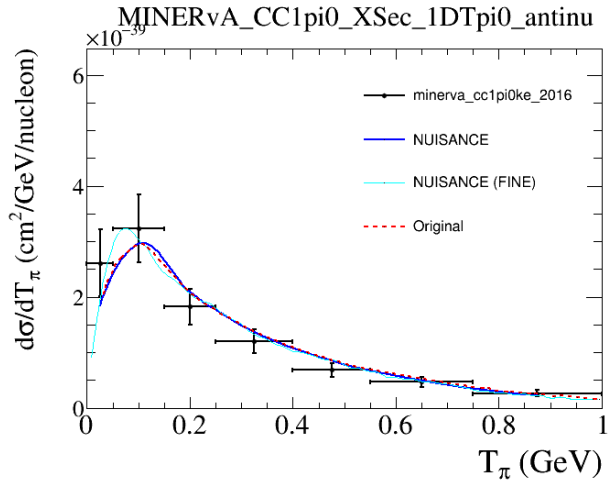## MINERvA_CC1pi0_XSec_1DQ2_antinu

MINERvA_CC1pi0_XSec_1DQ2_antinu_settings

- **name** : MINERvA_CC1pi0_XSec_1DQ2_antinu
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- **type** : DEFAULT
- **description** :
  |--> MINERvA_CC1pi0_XSec_1DQ2_antinu sample.
  |--> Target: CH
  |--> Flux: MINERvA Forward Horn Current numubar
  |--> Signal: Any event with 1 muon, 1 pion, no other tracks
- **xtitle** : Q^2 (GeV^2)
- **ytitle** : $d\sigma/dQ^2$ (cm^2/(GeV^2)/nucleon)
- **default_types** : FIX,FREE,SHAPE/DIAG/NORM/MASK
- **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
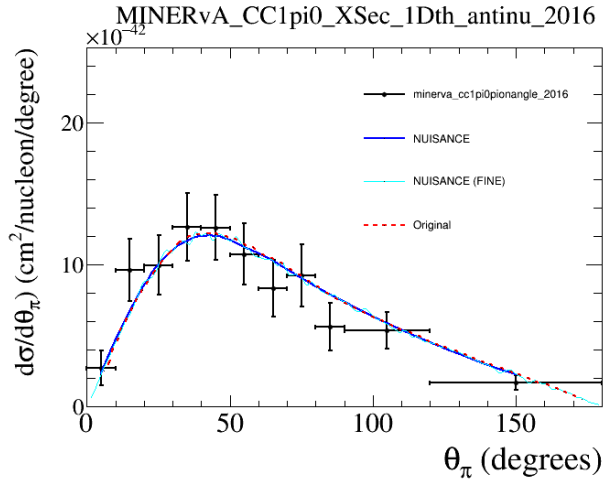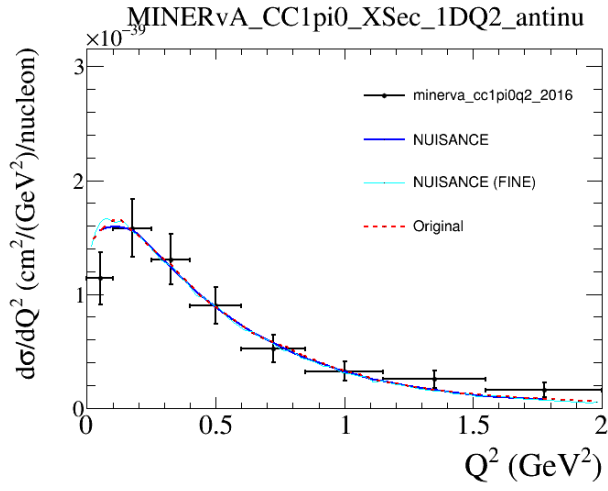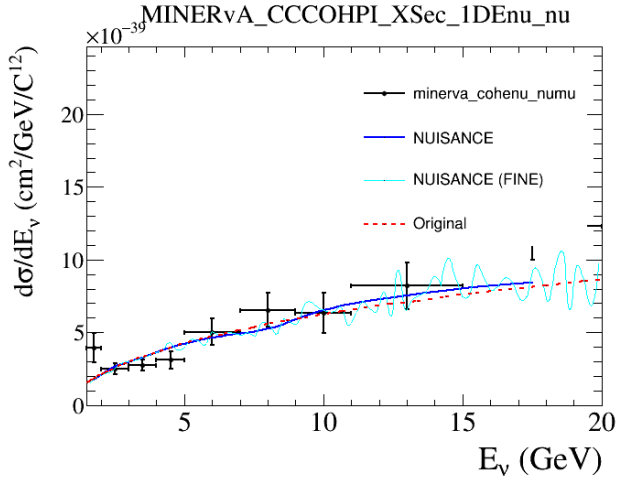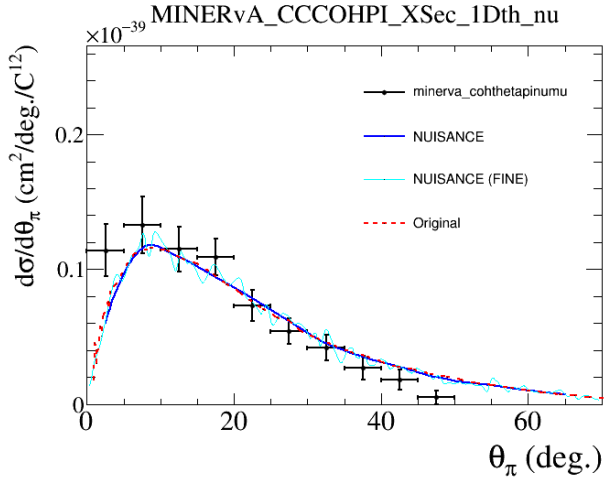- χ^2/**NDOF** : 1.30251

MINERvA_CCCOHPI_XSec_1DEnu_nu

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
- **xtitle** : E_ν (GeV)
- **ytitle** : $d\sigma/dE_\nu$ (cm^2/GeV/C^{12})
- **default_types** : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- **allowed_types** : FIX/FULL
- **enu_min** : 1.5
- **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/
- **originalname** : MINERvA_CCCOHPI_XSec_1DEnu_nu
- χ^2 : 14272.4
- **NDOF** : 9
- χ^2/**NDOF** : 1585.83

MINERvA_CCCOHPI_XSec_1Dth_nu

MINERvA_CCCOHPI_XSec_1Dth_nu_settings

- **name** : MINERvA_CCCOHPI_XSec_1Dth_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_1Dth_nu sample.
  |--> Target: CH
  |--> Flux: MINERvA Forward Horn Current numu
  |--> Signal: Any event with 1 mu-, 1pi+, and no other FS particles
- **xtitle** : θ_π (deg.)
- **ytitle** : $d\sigma/d\theta_\pi$ (cm^2/deg./C^{12})
- **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
- χ^2 : 43.6129
- **NDOF** : 12
- χ^2/**NDOF** : 3.6344
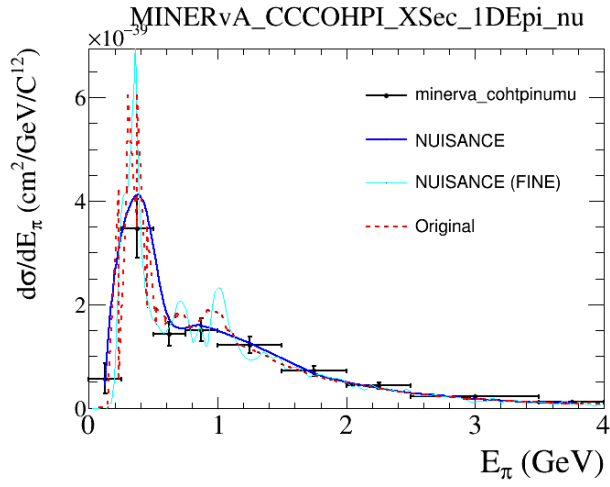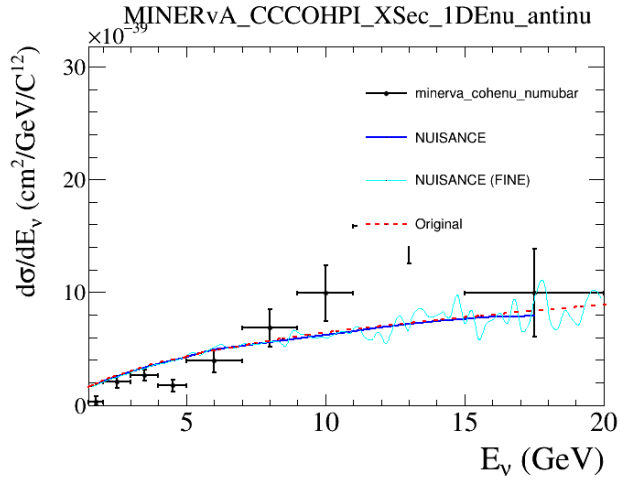
MINERvA_CCCOHPI_XSec_1DEpi_nu

MINERvA_CCCOHPI_XSec_1DEpi_nu_settings

- **name** : MINERvA_CCCOHPI_XSec_1DEpi_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_1DEpi_nu sample.
  |--> Target: CH
  |--> Flux: MINERvA Forward Horn Current numu
  |--> Signal: Any event with 1 mu-, 1pi+, and no other FS particles
- **xtitle** : E_π (GeV)
- **ytitle** : $d\sigma/dE_\pi$ (cm^2/GeV/C^{12})
- **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
- **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_nu
- **χ^2** : -95.0237
- **NDOF** : 9
- **χ^2/NDOF** : -10.5582

MINERvA_CCCOHPI_XSec_1DEnu_antinu

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_ν (GeV)
- **ytitle** : $d\sigma/dE_\nu$ (cm^2/GeV/C^{12})
- **default_types** : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- **allowed_types** : FIX/FULL
- **enu_min** : 1.5
- **enu_max** : 20
- **title** : MINERvA_CCCOHPI_XSec_1DEnu_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_1DEnu_antinu
- **χ^2** : 39.8795
- **NDOF** : 9
- **χ^2/NDOF** : 4.43105

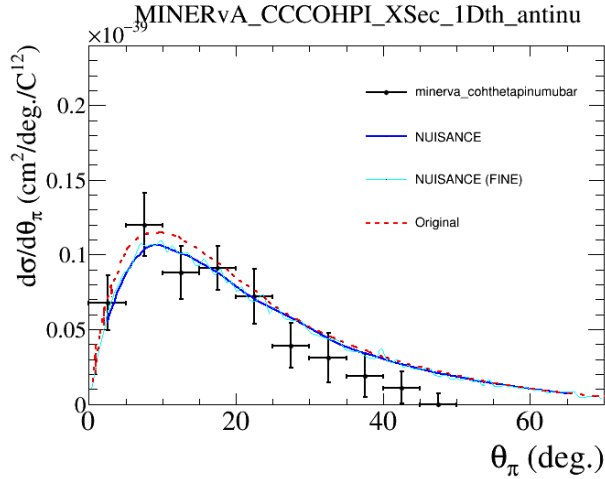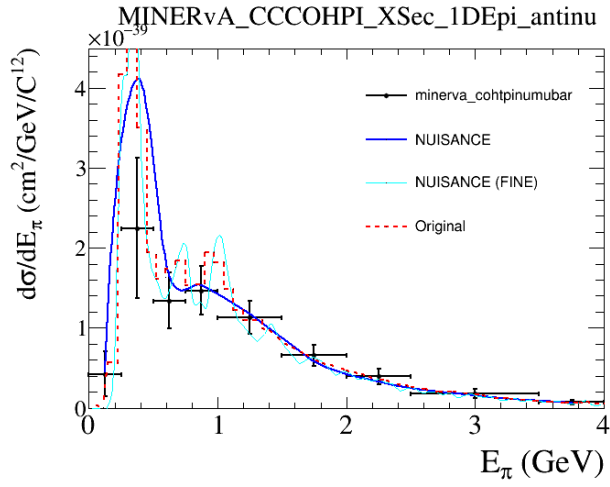## MINERvA_CCCOHPI_XSec_1Dth_antinu

MINERvA_CCCOHPI_XSec_1Dth_antinu_settings

- **name** : MINERvA_CCCOHPI_XSec_1Dth_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_1Dth_antinu sample.
  |--> Target: CH
  |--> Flux: MINERvA Reverse Horn Current numu
  |--> Signal: Any event with 1 mu+, 1pi-, and no other FS particles
- **xtitle** : θ_π (deg.)
- **ytitle** : $d\sigma/d\theta_\pi$ (cm^2/deg./C^{12})
- **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
- **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_antinu
- **χ^2** : 19.2385
- **NDOF** : 12
- **χ^2/NDOF** : 1.60321

MINERvA_CCCOHPI_XSec_1DEpi_antinu

MINERvA_CCinc_XSec_1DEnu_ratio_C12_CH

MINERvA_CCinc_XSec_1DEnu_ratio_Fe56_CH

MINERvA_CCinc_XSec_1DEnu_ratio_Pb208_CH

- minerva_numu_ccincratio_enuPb
- NUISANCE
- NUISANCE (FINE)
- Original

y-axis: $d\sigma/dE_\nu$ (cm^2/GeV/nucleon)
x-axis: E_ν (GeV)

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
  |--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- **xtitle** : E_ν (GeV)
- **ytitle** : $d\sigma/dE_\nu$ (cm^2/GeV/nucleon)
- **default_types** : FIX/DIAG,FULL/MASK
- **allowed_types** : FIX/FULL
- **enu_min** : 0
- **enu_max** : 20
- **title** : MINERvA_CCinc_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_CCinc_XSec_1DEnu_ratio_Pb208_CH
- **χ^2** : 2.59518e+74
- **NDOF** : 8
- **χ^2/NDOF** : 3.24398e+73

MINERvA_CCinc_XSec_1Dx_ratio_C12_CH

- minerva_numu_ccincratio_xC
- NUISANCE
- NUISANCE (FINE)
- Original

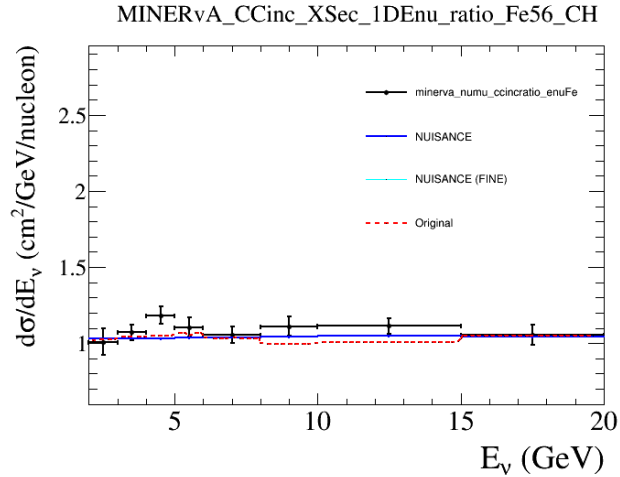y-axis: $d\sigma/dx$ (cm^2/nucleon)
x-axis: Reconstructed Bjorken x
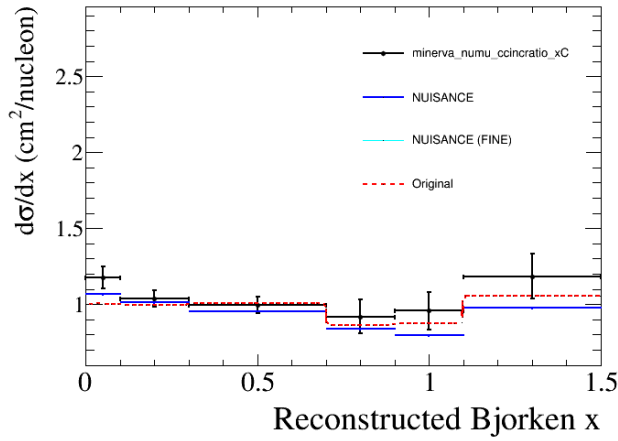
MINERvA_CCinc_XSec_1Dx_ratio_C12_CH_settings

- **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
  |--> 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** : $d\sigma/dx$ (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
- **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_CCinc_XSec_1Dx_ratio_C12_CH
- **χ^2** : 7.40944e+74
- **NDOF** : 6
- **χ^2/NDOF** : 1.23491e+74

MINERvA_CCinc_XSec_1Dx_ratio_Fe56_CH

- minerva_numu_ccincratio_xFe
- NUISANCE
- NUISANCE (FINE)
- Original

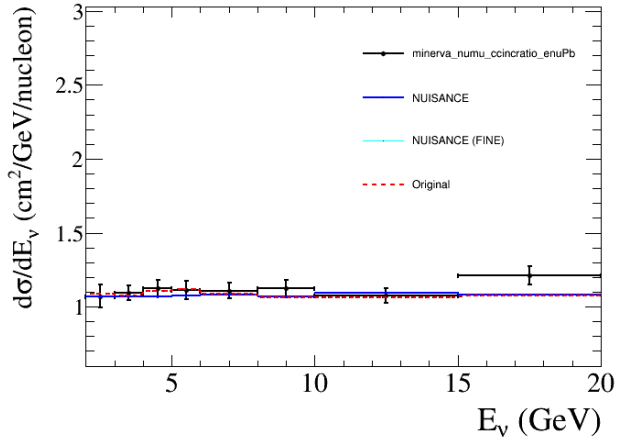y-axis: $d\sigma/dx$ (cm^2/nucleon)
x-axis: Reconstructed Bjorken x

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.OfficialDefault.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** : $d\sigma/dx$ (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
- **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_CCinc_XSec_1Dx_ratio_Fe56_CH
- **χ^2** : 2.20754e+75
- **NDOF** : 6
- **χ^2/NDOF** : 3.67923e+74

MINERvA_CCinc_XSec_1Dx_ratio_Pb208_CH

dσ/dx (cm^2/nucleon)
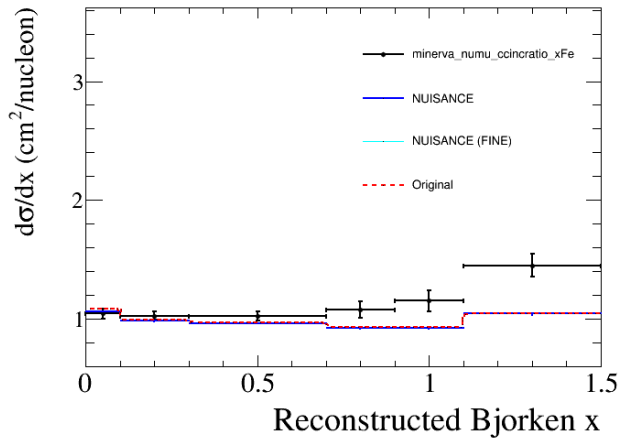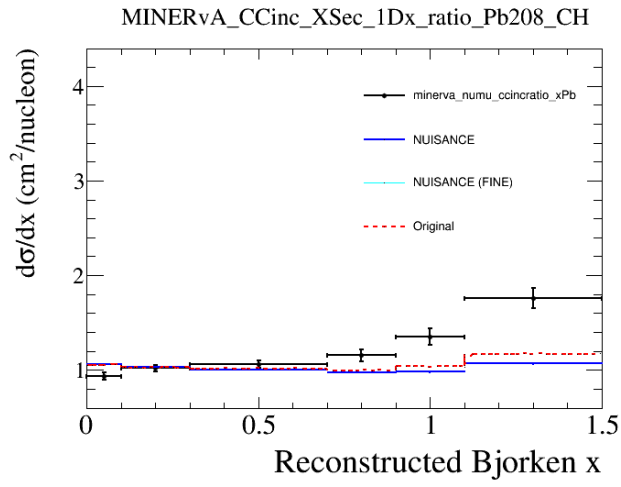
Reconstructed Bjorken x

- minerva_numu_ccincratio_xPb
- NUISANCE
- NUISANCE (FINE)
- Original

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.OfficialDefault.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
  |--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- **xtitle** : Reconstructed Bjorken x
- **ytitle** : dσ/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
- **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_CCinc_XSec_1Dx_ratio_Pb208_CH
- χ^2 : 6.68334e+75
- **NDOF** : 6
- χ^2/**NDOF** : 1.11389e+75