MINERvA_CCQE_XSec_1DQ2_nu

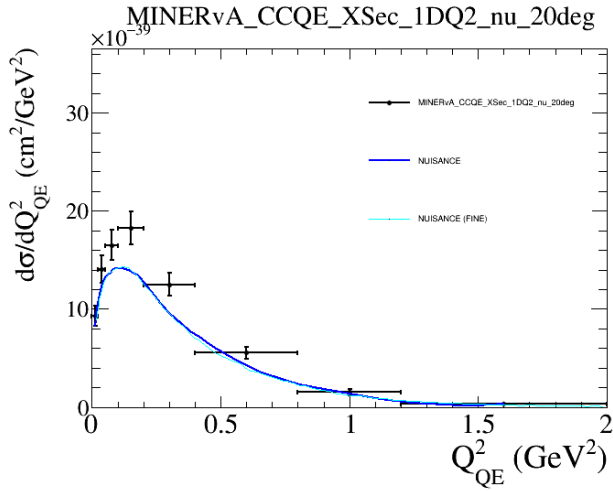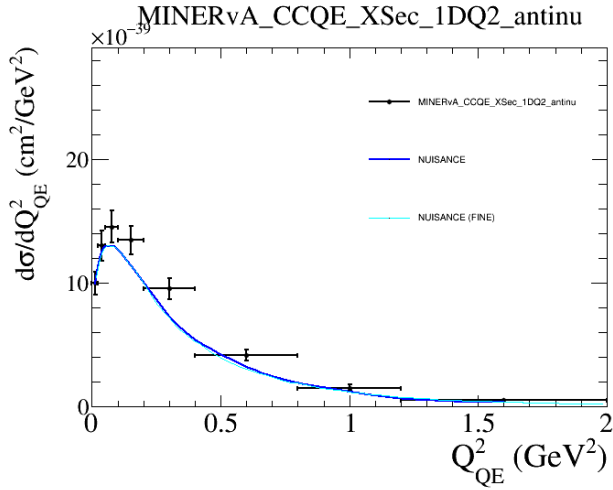MINERvA_CCQE_XSec_1DQ2_nu_settings

- **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^2_{QE} (GeV^2)
- **ytitle** : $d\sigma/dQ^2_{QE}$ (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_nu_20deg

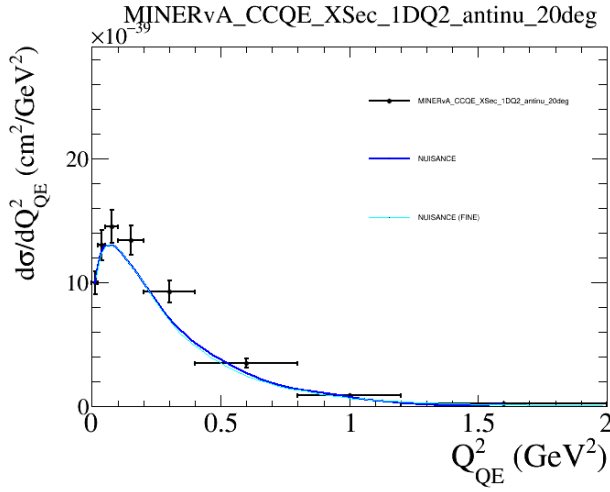MINERvA_CCQE_XSec_1DQ2_nu_20deg_settings

- **name** : MINERvA_CCQE_XSec_1DQ2_nu_20deg
- **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^2_{QE} (GeV^2)
- **ytitle** : $d\sigma/dQ^2_{QE}$ (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_20deg
- **χ^2** : 19.5167
- **NDOF** : 8
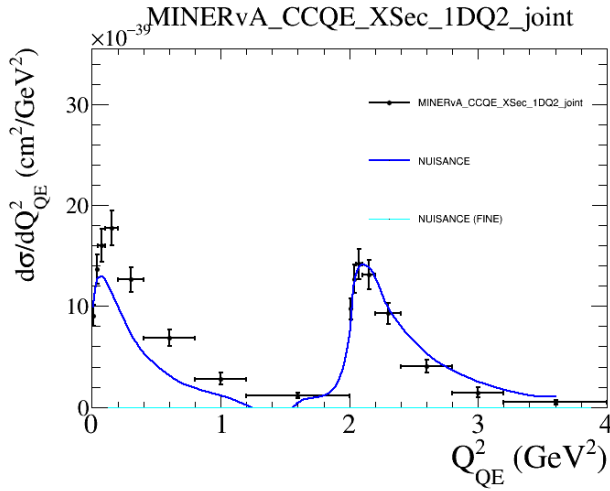- **χ^2/NDOF** : 2.43958

MINERvA_CCQE_XSec_1DQ2_antinu

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^2_{QE} (GeV^2)
- **ytitle** : $d\sigma/dQ^2_{QE}$ (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
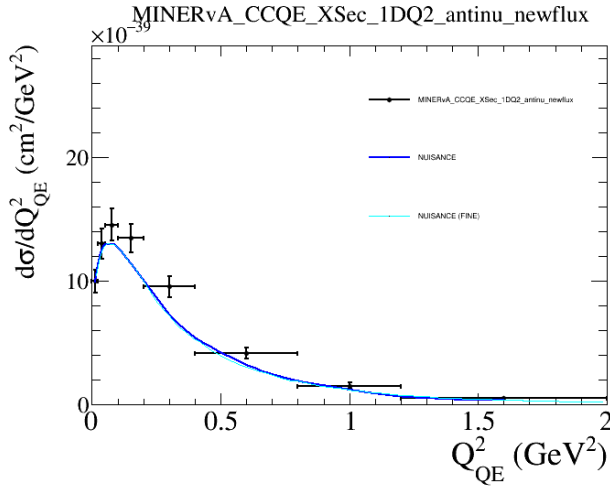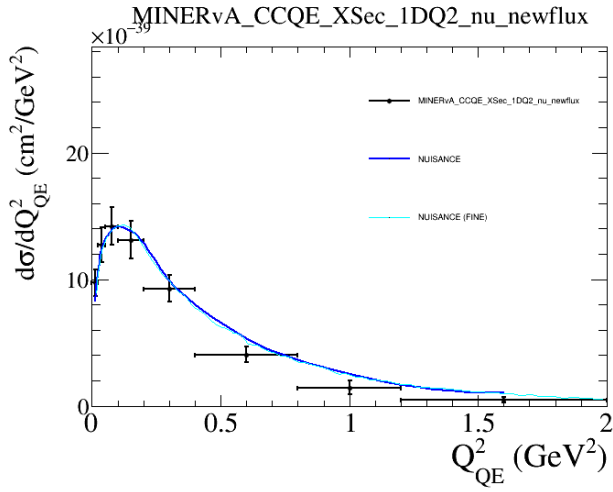- **χ^2/NDOF** : 2.48891

MINERvA_CCQE_XSec_1DQ2_antinu_20deg

MINERvA_CCQE_XSec_1DQ2_antinu_20deg_settings

- **name** : MINERvA_CCQE_XSec_1DQ2_antinu_20deg
- **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^2_{QE} (GeV^2)
- **ytitle** : $d\sigma/dQ^2_{QE}$ (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_20deg
- **χ²** : 19.6425
- **NDOF** : 8
- **χ²/NDOF** : 2.45532

MINERvA_CCQE_XSec_1DQ2_joint

MINERvA_CCQE_XSec_1DQ2_joint_settings

- **name** : MINERvA_CCQE_XSec_1DQ2_joint
- **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_joint 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^2_{QE} (GeV^2)
- **ytitle** : $d\sigma/dQ^2_{QE}$ (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_joint
- **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_joint
- **χ²** : 332.433
- **NDOF** : 16
- **χ²/NDOF** : 20.7771

MINERvA_CCQE_XSec_1DQ2_antinu_newflux
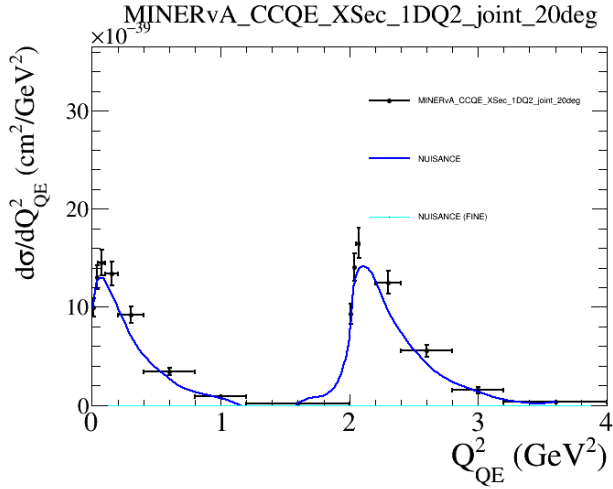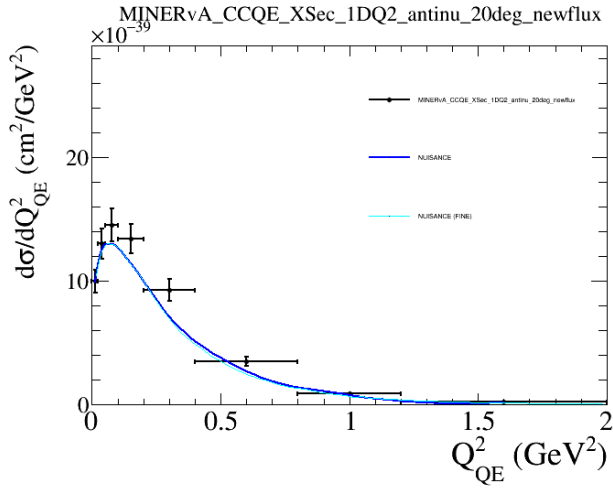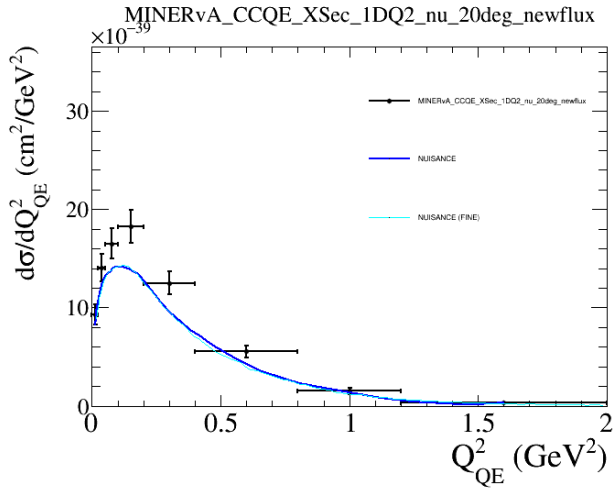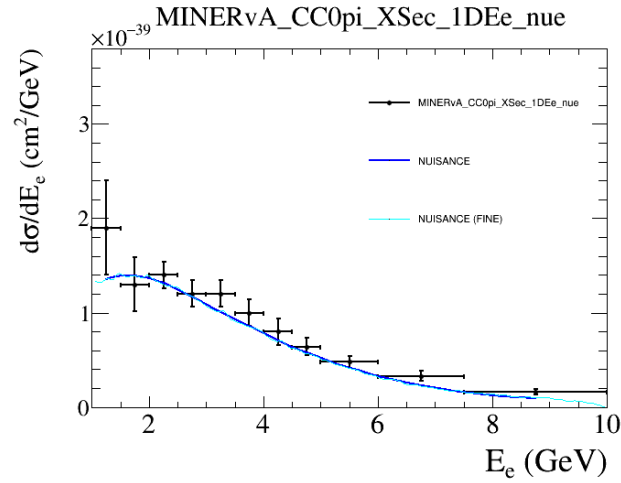
MINERvA_CCQE_XSec_1DQ2_antinu_newflux_settings

- **name** : MINERvA_CCQE_XSec_1DQ2_antinu_newflux
- **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^2_{QE} (GeV^2)
- **ytitle** : $d\sigma/dQ^2_{QE}$ (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_newflux
- **χ²** : 19.9113
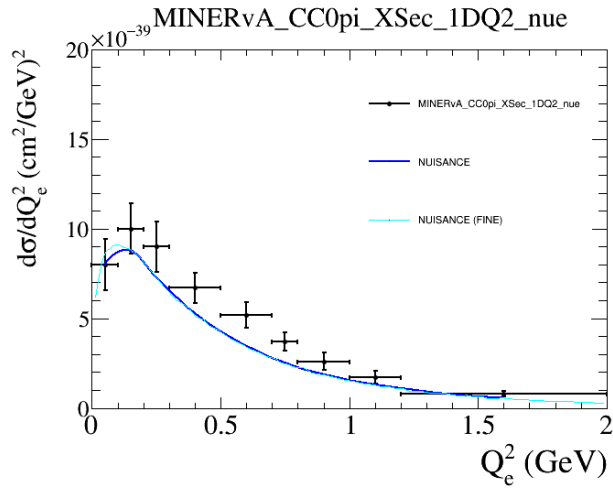- **NDOF** : 8
- **χ²/NDOF** : 2.48891

MINERvA_CCQE_XSec_1DQ2_nu_newflux

MINERvA_CCQE_XSec_1DQ2_nu_newflux_settings

- **name** : MINERvA_CCQE_XSec_1DQ2_nu_newflux
- **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^2_{QE} (GeV^2)
- **ytitle** : $d\sigma/dQ^2_{QE}$ (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_newflux
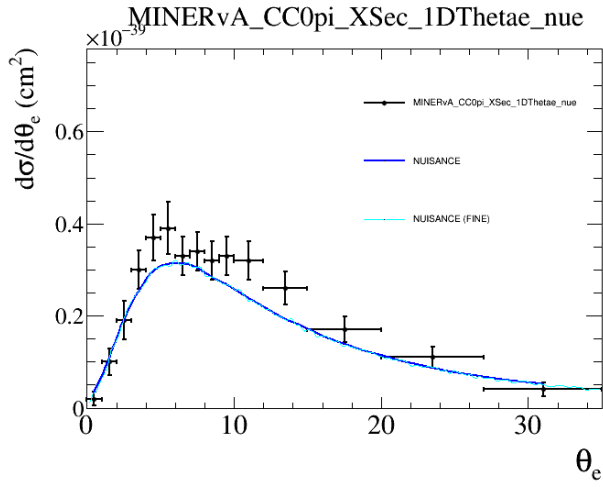- χ^2 : 19.3218
- **NDOF** : 8
- χ^2/**NDOF** : 2.41522
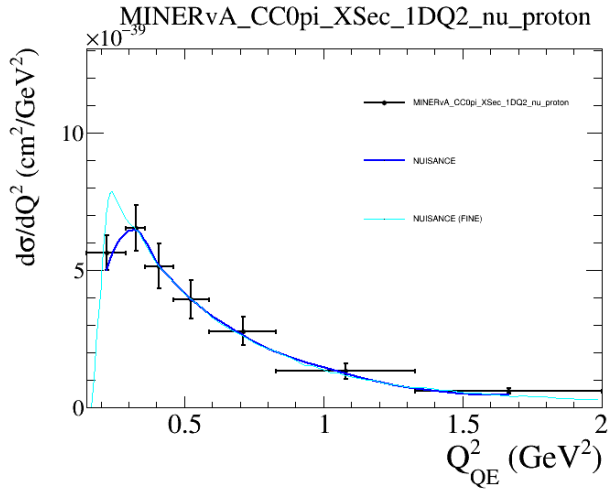
MINERvA_CCQE_XSec_1DQ2_joint_20deg

MINERvA_CCQE_XSec_1DQ2_joint_20deg_settings

- **name** : MINERvA_CCQE_XSec_1DQ2_joint_20deg
- **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_joint 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^2_{QE} (GeV^2)
- **ytitle** : $d\sigma/dQ^2_{QE}$ (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_joint
- **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_joint_20deg
- χ^2 : 38.4499
- **NDOF** : 16
- χ^2/**NDOF** : 2.40312

MINERvA_CCQE_XSec_1DQ2_antinu_20deg_newflux

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.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^2_{QE} (GeV^2)
- **ytitle** : $d\sigma/dQ^2_{QE}$ (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_20deg_newflux
- χ^2 : 19.6425
- **NDOF** : 8
- χ^2/**NDOF** : 2.45532

MINERvA_CCQE_XSec_1DQ2_nu_20deg_newflux

MINERvA_CC0pi_XSec_1DEe_nue

MINERvA_CC0pi_XSec_1DQ2_nue

MINERvA_CC0pi_XSec_1DThetae_nue

MINERvA_CC0pi_XSec_1DQ2_nu_proton

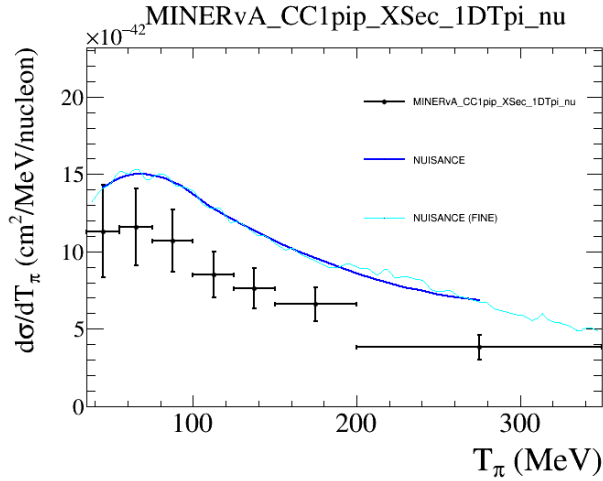## MINERvA_CC1pip_XSec_1DTpi_nu

MINERvA_CC1pip_XSec_1DTpi_nu_20deg
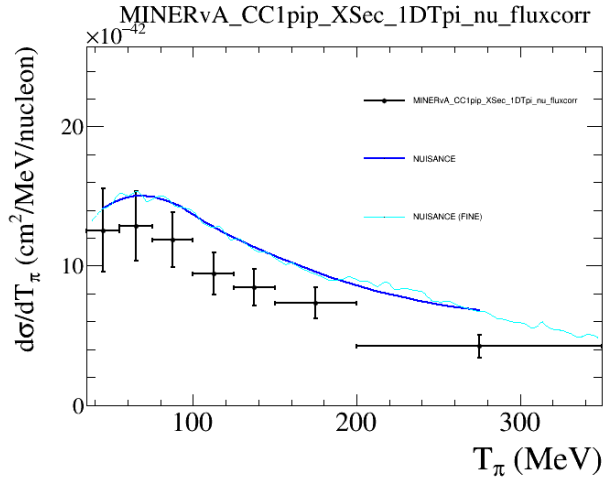
MINERvA_CC1pip_XSec_1DTpi_nu_20deg_settings

- **name** : MINERvA_CC1pip_XSec_1DTpi_nu_20deg
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.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
  |--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- **xtitle** : T_π (MeV)
- **ytitle** : $d\sigma/dT_\pi$ (cm^2/MeV/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_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/
- **originalname** : MINERvA_CC1pip_XSec_1DTpi_nu_20deg
- χ^2 : 22.8941
- **NDOF** : 7
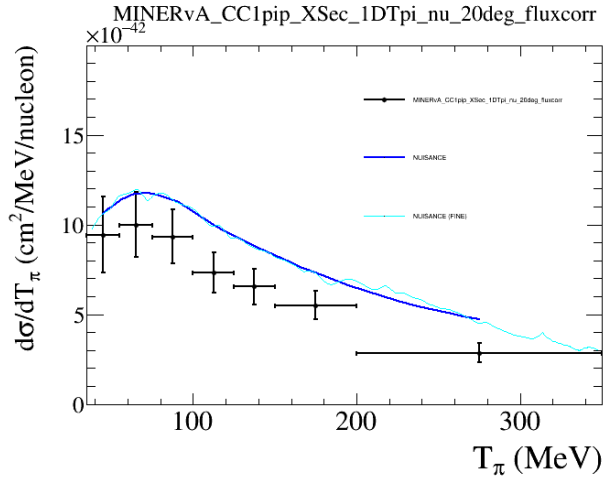- χ^2/**NDOF** : 3.27058

MINERvA_CC1pip_XSec_1DTpi_nu_fluxcorr

MINERvA_CC1pip_XSec_1DTpi_nu_fluxcorr_settings

- **name** : MINERvA_CC1pip_XSec_1DTpi_nu_fluxcorr
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.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
  |--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- **xtitle** : T_π (MeV)
- **ytitle** : $d\sigma/dT_\pi$ (cm^2/MeV/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_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/
- **originalname** : MINERvA_CC1pip_XSec_1DTpi_nu_fluxcorr
- χ^2 : 19.3819
- **NDOF** : 7
- χ^2/**NDOF** : 2.76885
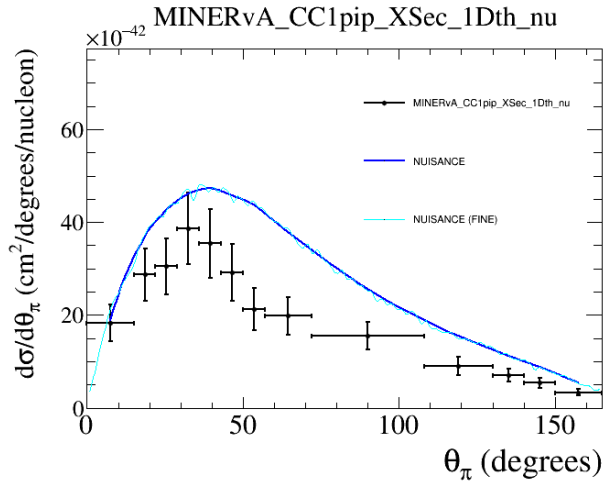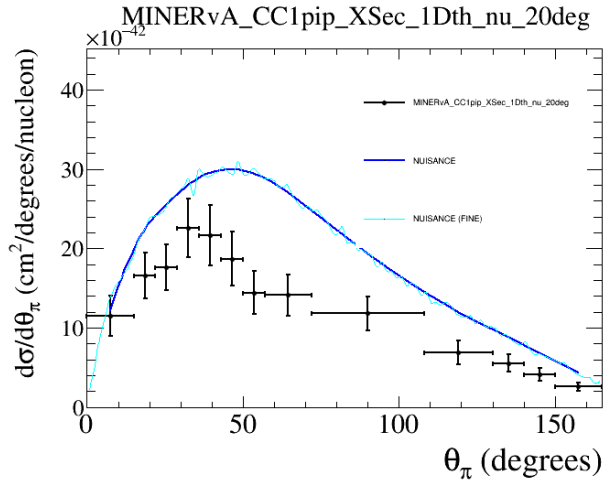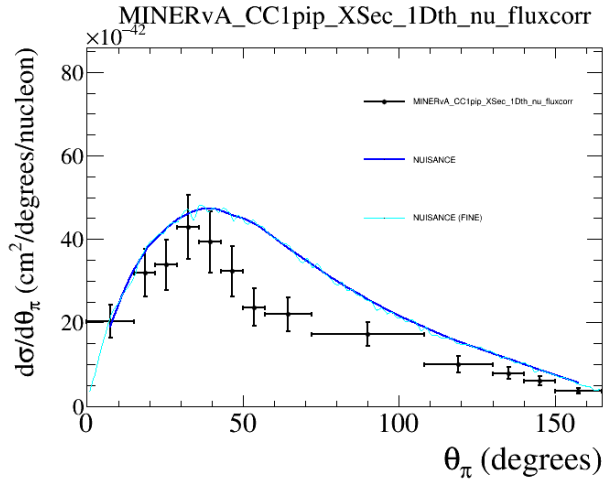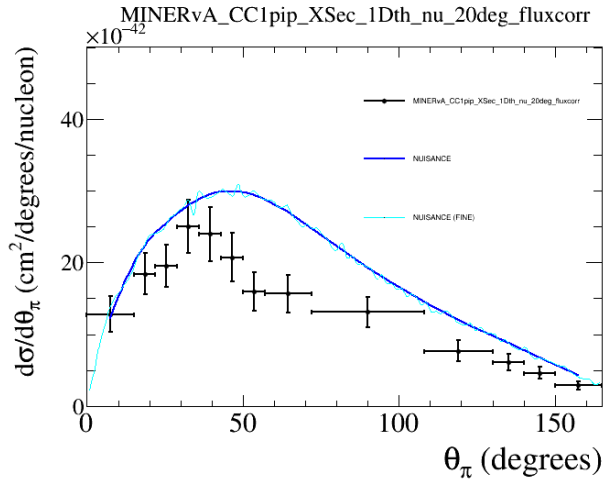
MINERvA_CC1pip_XSec_1DTpi_nu_20deg_fluxcorr

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.OfficialDefault.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
  |--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- **xtitle** : T_π (MeV)
- **ytitle** : $d\sigma/dT_\pi$ (cm^2/MeV/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_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/
- **originalname** : MINERvA_CC1pip_XSec_1DTpi_nu_20deg_fluxcorr
- χ^2 : 20.0449
- **NDOF** : 7
- χ^2/**NDOF** : 2.86355

MINERvA_CC1pip_XSec_1Dth_nu

MINERvA_CC1pip_XSec_1Dth_nu_20deg

MINERvA_CC1pip_XSec_1Dth_nu_fluxcorr

MINERvA_CC1pip_XSec_1Dth_nu_20deg_fluxcorr

MINERvA_CCNpip_XSec_1Dth_nu

MINERvA_CCNpip_XSec_1Dth_nu_2015

MINERvA_CCNpip_XSec_1Dth_nu_2016

MINERvA_CCNpip_XSec_1Dth_nu_2015_20deg

MINERvA_CCNpip_XSec_1Dth_nu_2015_fluxcorr

MINERvA_CCNpip_XSec_1Dth_nu_2015_20deg_fluxcorr
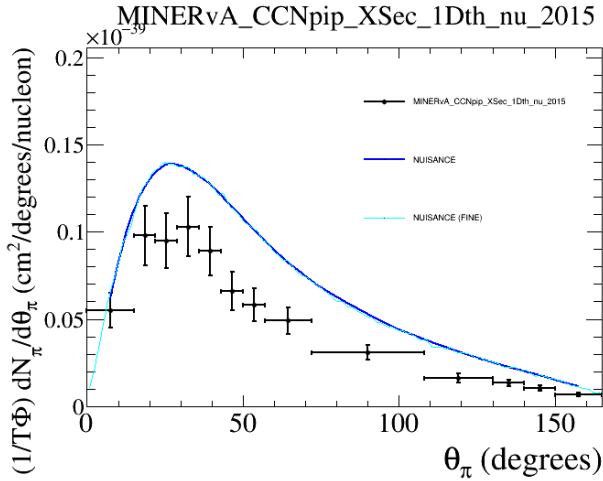
MINERvA_CCNpip_XSec_1Dth_nu_2015_20deg_fluxcorr_settings

- **name** : MINERvA_CCNpip_XSec_1Dth_nu_2015_20deg_fluxcorr
- **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_2015_20deg_fluxcorr
- χ^2 : 75.422
- **NDOF** : 13
- χ^2/**NDOF** : 5.80169

MINERvA_CCNpip_XSec_1DTpi_nu
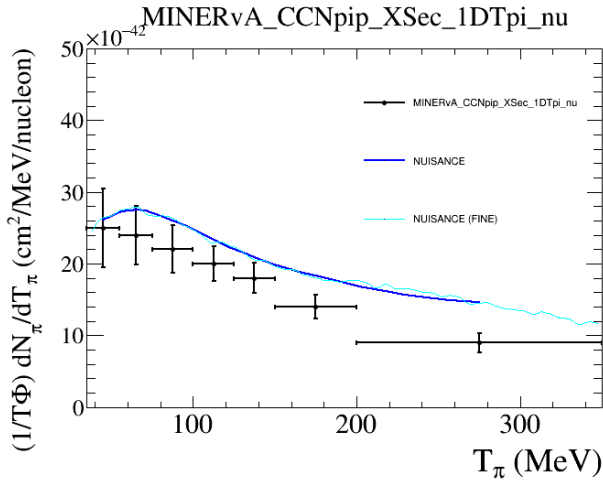
MINERvA_CCNpip_XSec_1DTpi_nu_settings
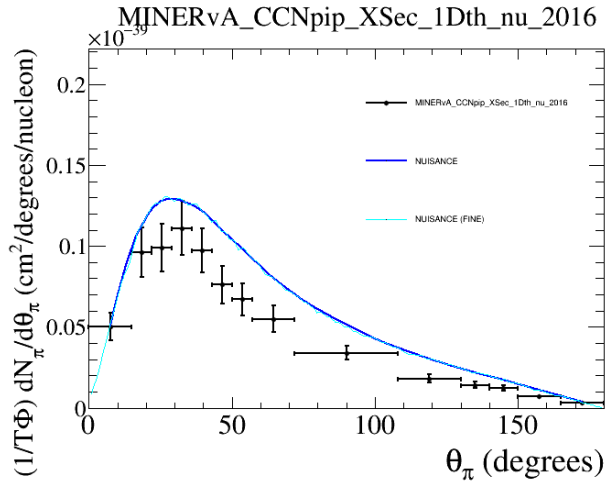
- **name** : MINERvA_CCNpip_XSec_1DTpi_nu
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- **type** : DEFAULT
- **description** :
  |--> MINERvA_CCNpip_XSec_1DTpi_nu sample.
  |--> Target: CH
  |--> Flux: MINERvA Forward Horn Current nue + nuebar
  |--> Signal: Any event with 1 electron, any nucleons, and no other FS particles
- **xtitle** : T_π (MeV)
- **ytitle** : $(1/T\Phi)\, dN_\pi/dT_\pi$ (cm^2/MeV/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_1DTpi_nu
- **originalname** : MINERvA_CCNpip_XSec_1DTpi_nu
- χ^2 : 25.081
- **NDOF** : 7
- χ^2/**NDOF** : 3.583

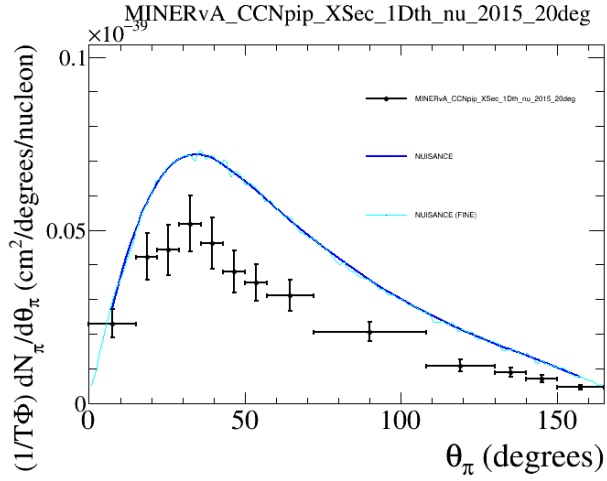## MINERvA_CCNpip_XSec_1DTpi_nu_2015

MINERvA_CCNpip_XSec_1DTpi_nu_2015_settings

- **name** : MINERvA_CCNpip_XSec_1DTpi_nu_2015
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- **type** : DEFAULT
- **description** :
  |--> MINERvA_CCNpip_XSec_1DTpi_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** : T_π (MeV)
- **ytitle** : $(1/T\Phi)\, dN_\pi/dT_\pi$ (cm^2/MeV/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_1DTpi_nu
- **originalname** : MINERvA_CCNpip_XSec_1DTpi_nu_2015
- χ^2 : 35.4956
- **NDOF** : 7
- χ^2/**NDOF** : 5.07079

MINERvA_CCNpip_XSec_1DTpi_nu_2016

MINERvA_CCNpip_XSec_1DTpi_nu_2015_20deg

MINERvA_CCNpip_XSec_1DTpi_nu_2015_fluxcorr

MINERvA_CCNpip_XSec_1DTpi_nu_2015_20deg_fluxcorr

MINERvA_CCNpip_XSec_1Dthmu_nu
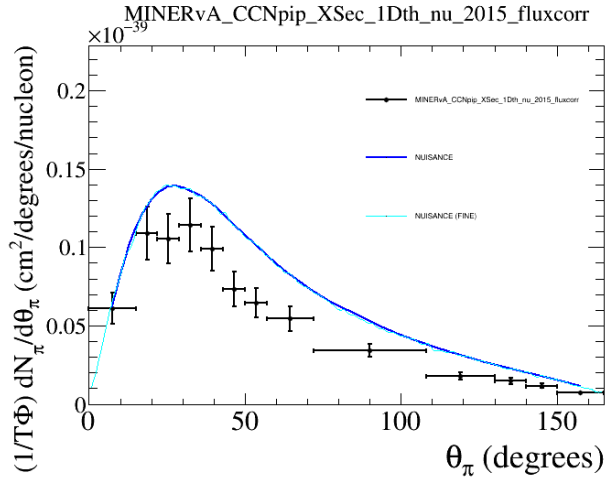
MINERvA_CCNpip_XSec_1Dpmu_nu

MINERvA_CCNpip_XSec_1DQ2_nu

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** :
  |--> MINERvA_CCNpip_XSec_1DQ2_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** : Q^2 (GeV^2)
- **ytitle** : dσ/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
- **covar** : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/
- **originalname** : MINERvA_CCNpip_XSec_1DQ2_nu
- χ^2 : 15.5382
- **NDOF** : 8
- χ^2/**NDOF** : 1.94227

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** : dσ(E_ν) (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_CC1pip_XSec_1DTpi_nu_2017
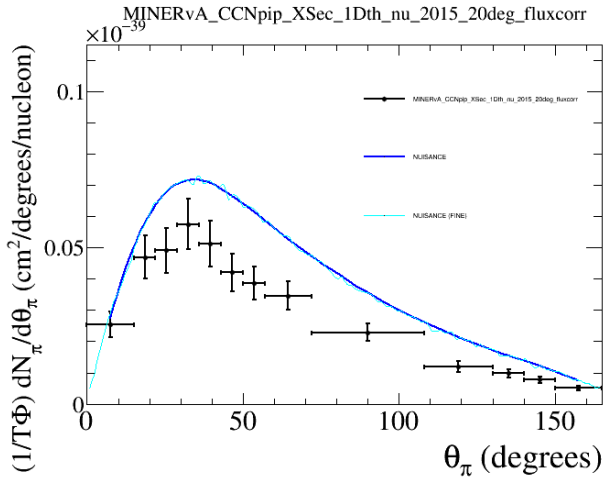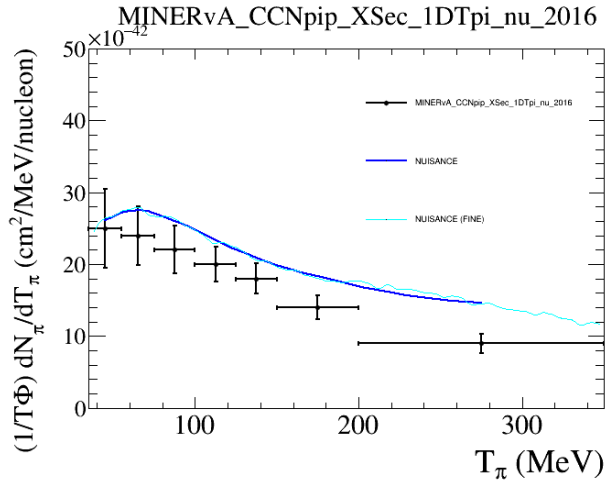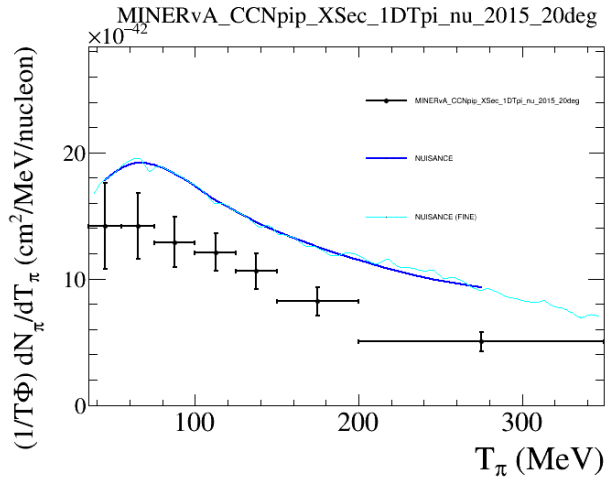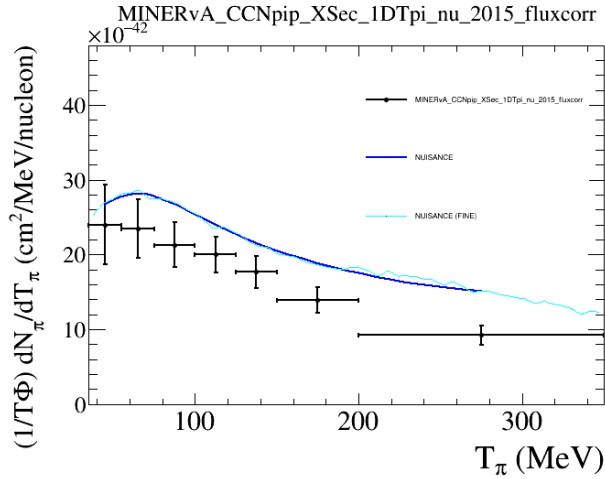
MINERvA_CC1pip_XSec_1DTpi_nu_2017_settings

- **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
- **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** : T_π (MeV)
- **ytitle** : dσ/dT_π (cm^2/nucleon/MeV)
- **originalname** : MINERvA_CC1pip_XSec_1DTpi_nu_2017
- χ^2 : 13.5007
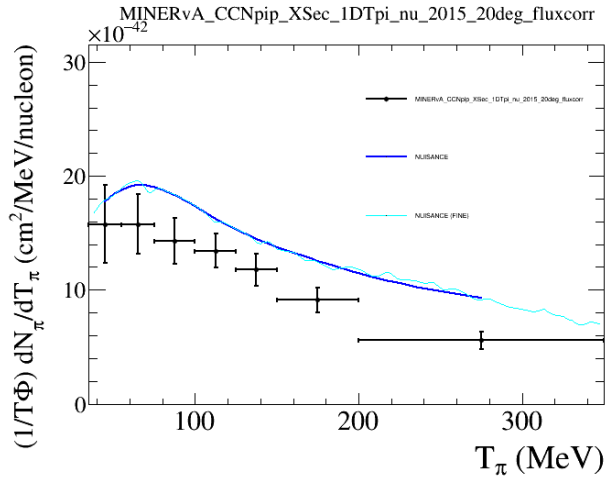- **NDOF** : 7
- χ^2/**NDOF** : 1.92868

MINERvA_CC1pip_XSec_1Dth_nu_2017

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
- **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** : θ_π
- **ytitle** : $d\sigma/d\theta_\pi$ (cm^2/nucleon)
- **originalname** : MINERvA_CC1pip_XSec_1Dth_nu_2017
- **χ^2** : 82.9066
- **NDOF** : 14
- **χ^2/NDOF** : 5.9219

MINERvA_CC1pip_XSec_1Dpmu_nu_2017

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
- **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** : p_μ (GeV)
- **ytitle** : $d\sigma/dp_\mu$ (cm^2/nucleon/GeV)
- **originalname** : MINERvA_CC1pip_XSec_1Dpmu_nu_2017
- **χ^2** : 20.458
- **NDOF** : 8
- **χ^2/NDOF** : 2.55725

MINERvA_CC1pip_XSec_1Dthmu_nu_2017
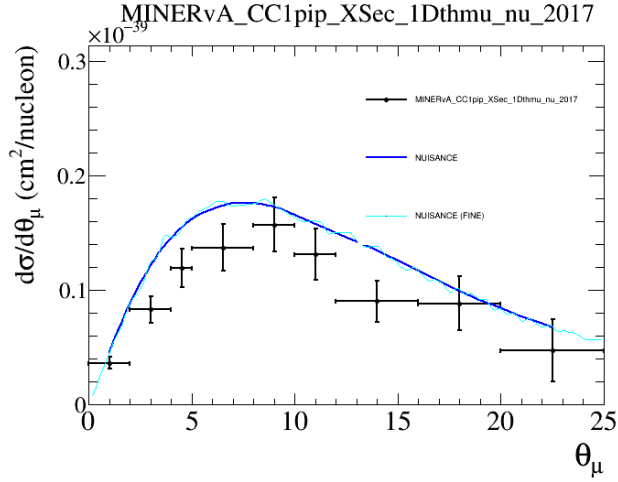
MINERvA_CC1pip_XSec_1Dthmu_nu_2017_settings

- **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
- **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** : θ_μ
- **ytitle** : $d\sigma/d\theta_\mu$ (cm^2/nucleon)
- **originalname** : MINERvA_CC1pip_XSec_1Dthmu_nu_2017
- **χ^2** : 32.2319
- **NDOF** : 9
- **χ^2/NDOF** : 3.58132

MINERvA_CC1pip_XSec_1DQ2_nu_2017
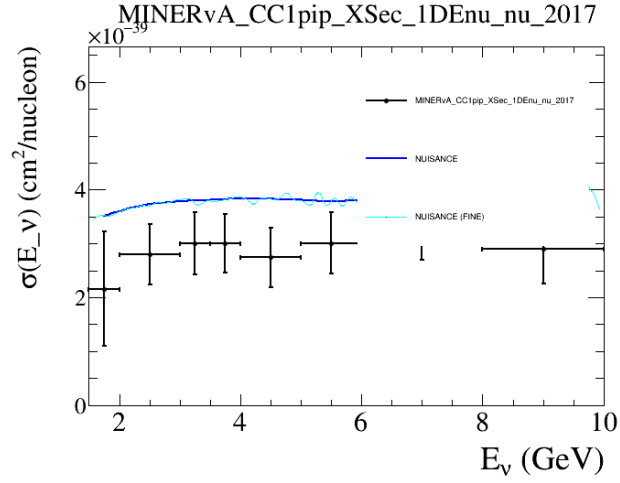
MINERvA_CC1pip_XSec_1DEnu_nu_2017

MINERvA_CC1pi0_XSec_1Dth_antinu

MINERvA_CC1pi0_XSec_1Dth_antinu_2015

MINERvA_CC1pi0_XSec_1Dth_antinu_2016

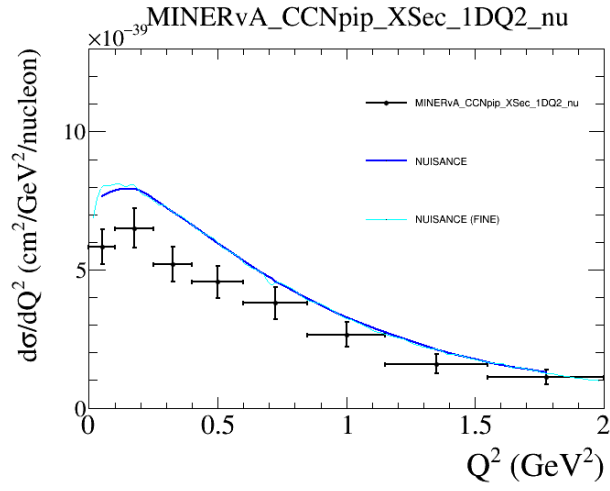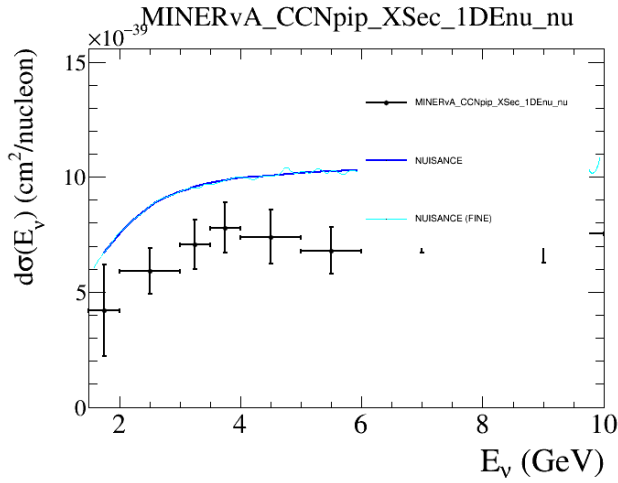## MINERvA_CC1pi0_XSec_1Dth_antinu_fluxcorr

MINERvA_CC1pi0_XSec_1Dth_antinu_2015_fluxcorr

MINERvA_CC1pi0_XSec_1Dth_antinu_2015_fluxcorr_settings

- **name** : MINERvA_CC1pi0_XSec_1Dth_antinu_2015_fluxcorr
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- **type** : DEFAULT
- **description** :
  |--> MINERvA_CC1pi0_XSec_1Dth_antinu sample.
  |--> Target: CH
  |--> Flux: MINERvA Forward Horn Current numubar
  |--> Signal: Any event with 1 muon, 1 pion, no other tracks
- **xtitle** : θ_π (degrees)
- **ytitle** : $d\sigma/d\theta_\pi$ (cm^2/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
- χ^2/**NDOF** : 1.30607

MINERvA_CC1pi0_XSec_1Dth_antinu_2016_fluxcorr

MINERvA_CC1pi0_XSec_1Dth_antinu_2016_fluxcorr_settings

- **name** : MINERvA_CC1pi0_XSec_1Dth_antinu_2016_fluxcorr
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- **type** : DEFAULT
- **description** :
  |--> MINERvA_CC1pi0_XSec_1Dth_antinu sample.
  |--> Target: CH
  |--> Flux: MINERvA Forward Horn Current numubar
  |--> Signal: Any event with 1 muon, 1 pion, no other tracks
- **xtitle** : θ_π (degrees)
- **ytitle** : $d\sigma/d\theta_\pi$ (cm^2/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_2016_fluxcorr
- χ^2 : 8.74057
- **NDOF** : 11
- χ^2/**NDOF** : 0.794597
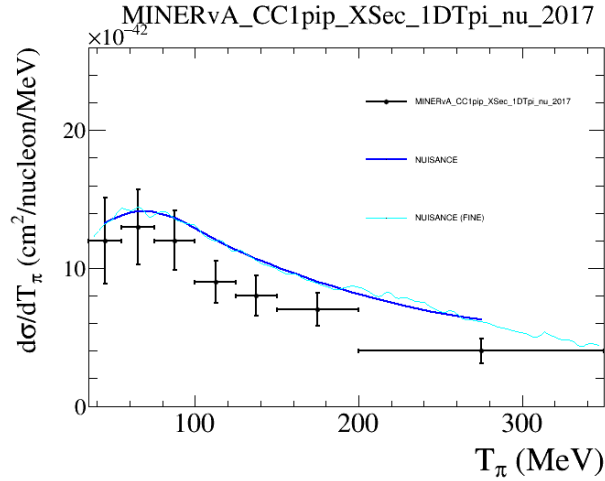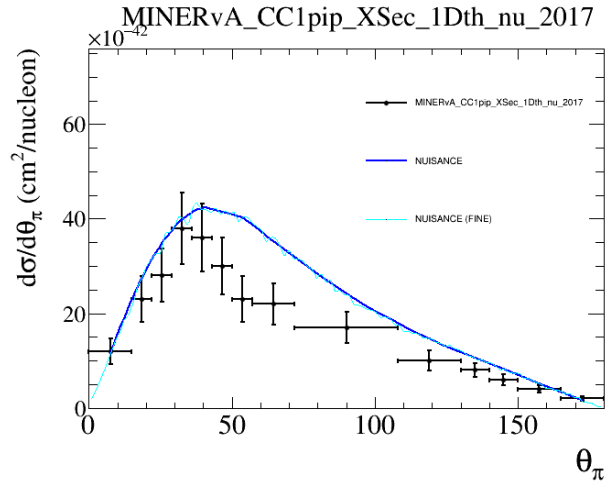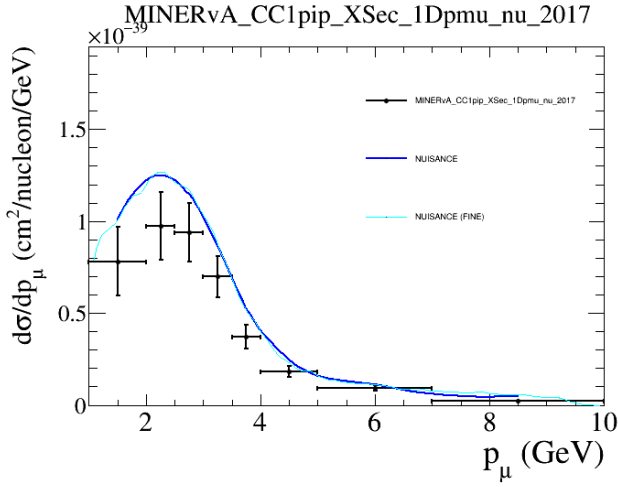
MINERvA_CC1pi0_XSec_1Dppi0_antinu

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_1Dppi0_antinu_fluxcorr

MINERvA_CC1pi0_XSec_1Dppi0_antinu_fluxcorr_settings

- **name** : MINERvA_CC1pi0_XSec_1Dppi0_antinu_fluxcorr
- **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_fluxcorr
- χ^2 : 29.9674
- **NDOF** : 11
- χ^2/**NDOF** : 2.72431

MINERvA_CC1pi0_XSec_1DTpi0_antinu

MINERvA_CC1pi0_XSec_1DTpi0_antinu_settings

- **name** : MINERvA_CC1pi0_XSec_1DTpi0_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_1DTpi0_antinu sample.
  |--> Target: CH
  |--> Flux: MINERvA Forward Horn Current numubar
  |--> Signal: Any event with 1 muon, 1 pion, no other tracks
- **xtitle** : T_π (GeV)
- **ytitle** : $d\sigma/dT_\pi$ (cm^2/GeV/nucleon)
- **default_types** : FIX,FREE,SHAPE/DIAG,FULL/NORM/MASK
- **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
- χ^2/**NDOF** : 1.50969

MINERvA_CC1pi0_XSec_1DQ2_antinu
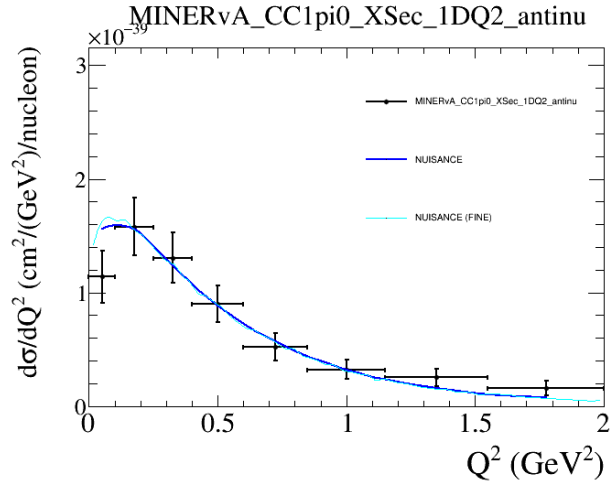
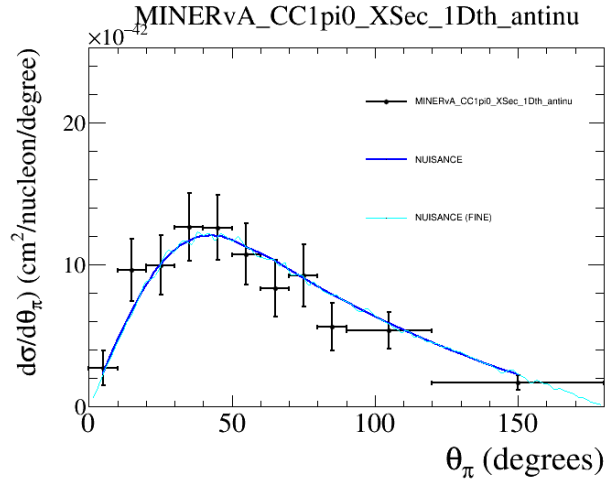MINERvA_CC1pi0_XSec_1DQ2_antinu_settings

- **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
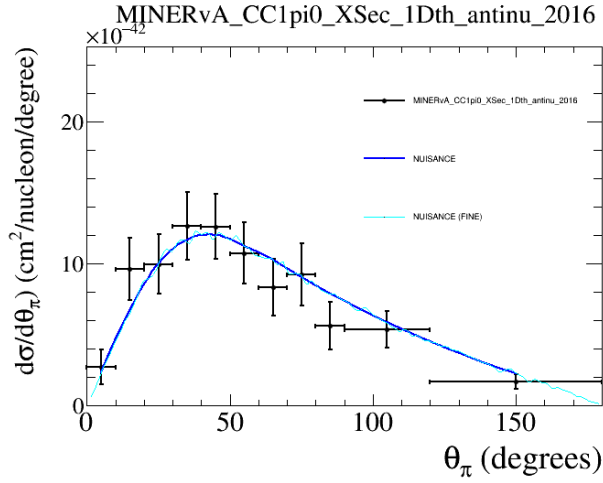- χ^2/**NDOF** : 1.30251

MINERvA_CC1pi0_XSec_1Dthmu_antinu
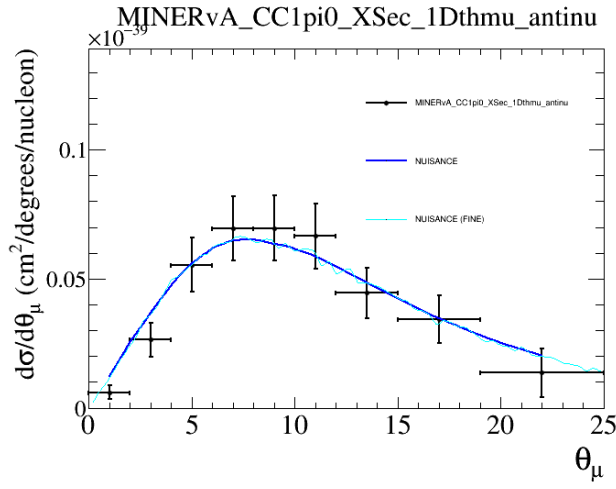
MINERvA_CC1pi0_XSec_1Dthmu_antinu_settings

- **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
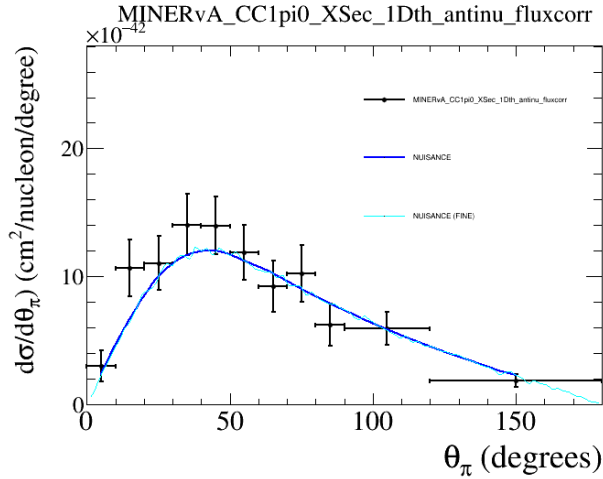- **NDOF** : 9
- χ^2/**NDOF** : 1.17064

MINERvA_CC1pi0_XSec_1Dpmu_antinu
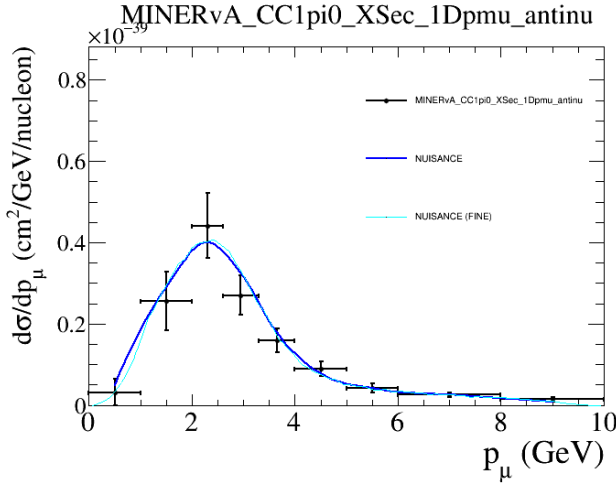
MINERvA_CC1pi0_XSec_1Dpmu_antinu_settings
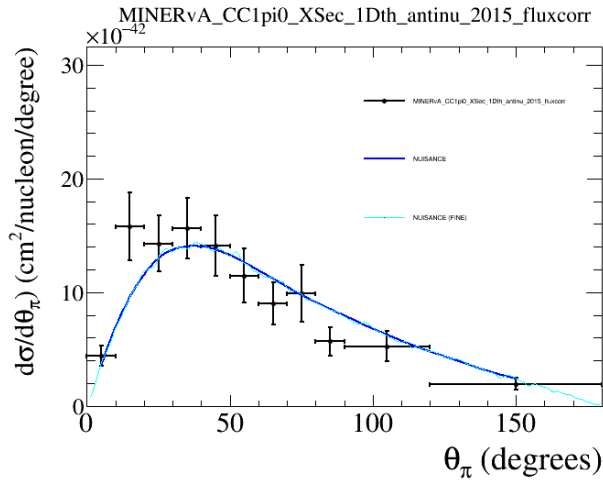
- **name** : MINERvA_CC1pi0_XSec_1Dpmu_antinu
- **input** : GENIE:@GENIE_DIR/gntp.R-2_6_3.OfficialDefault.Default.MINERvA_rhc_numubar.CH.2500000.2.prepa
- **type** : DEFAULT
- **description** :
  |--> MINERvA_CC1pi0_XSec_1Dpmu_antinu sample.
  |--> Target: CH
  |--> Flux: MINERvA Forward Horn Current numubarr
  |--> Signal: Any event with 1 muon, 1 pion, no other tracks
- **xtitle** : p_μ (GeV)
- **ytitle** : $d\sigma/dp_\mu$ (cm^2/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
- χ^2 : 7.07499
- **NDOF** : 9
- χ^2/**NDOF** : 0.78611

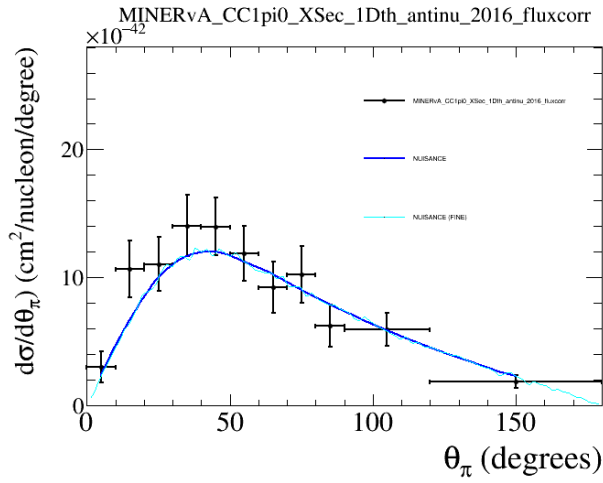## MINERvA_CC1pi0_XSec_1DEnu_antinu

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_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
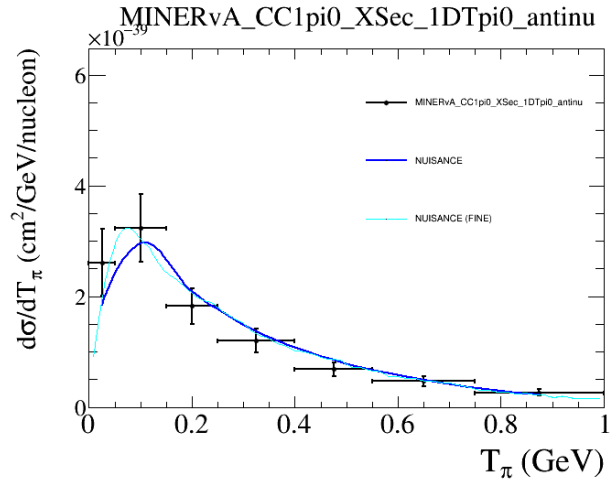- **NDOF** : 9
- **χ^2/NDOF** : 1585.83

MINERvA_CCCOHPI_XSec_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_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_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_1DEpi_antinu

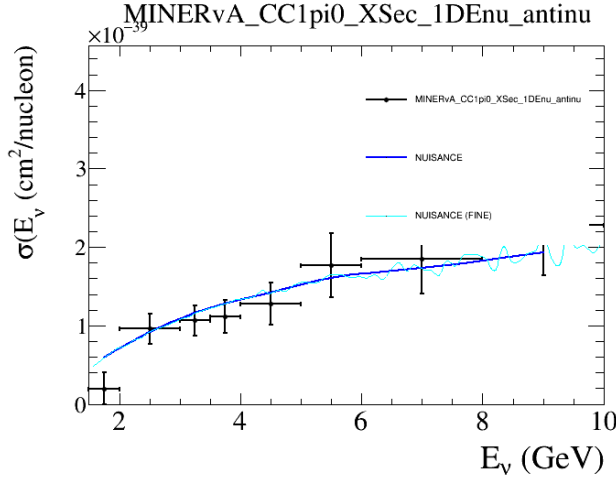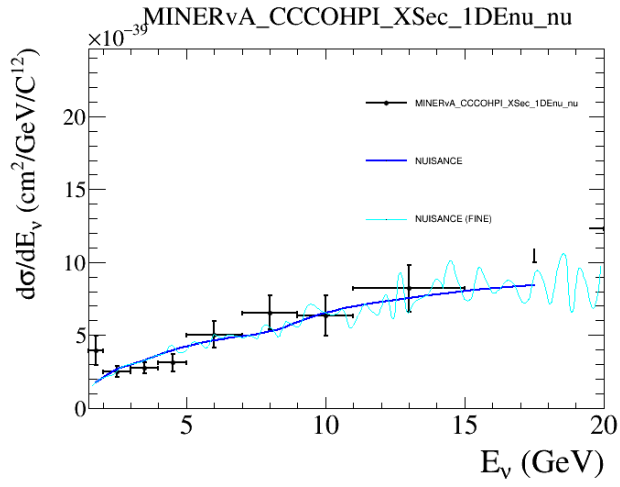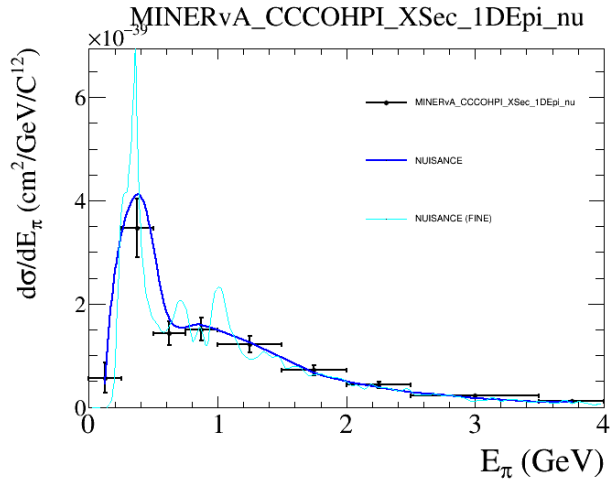MINERvA_CCCOHPI_XSec_1DEpi_antinu_settings

- **name** : MINERvA_CCCOHPI_XSec_1DEpi_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_1DEpi_antinu sample.
  |--> Target: CH
  |--> Flux: MINERvA Reverse 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_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
- χ^2 : 8.19465
- **NDOF** : 9
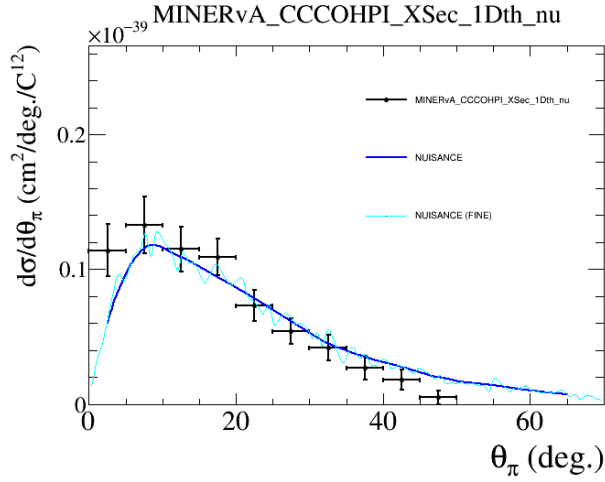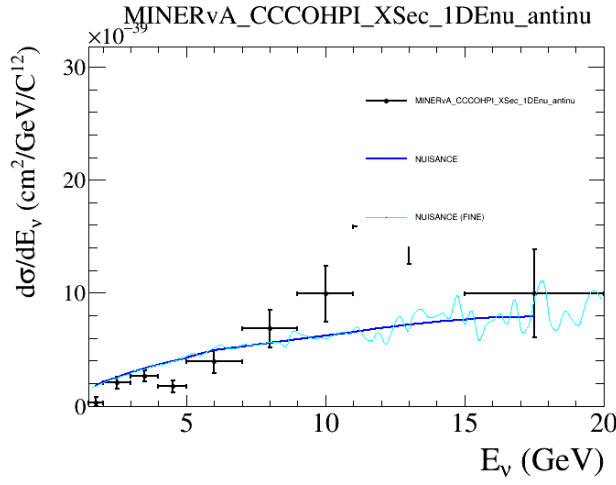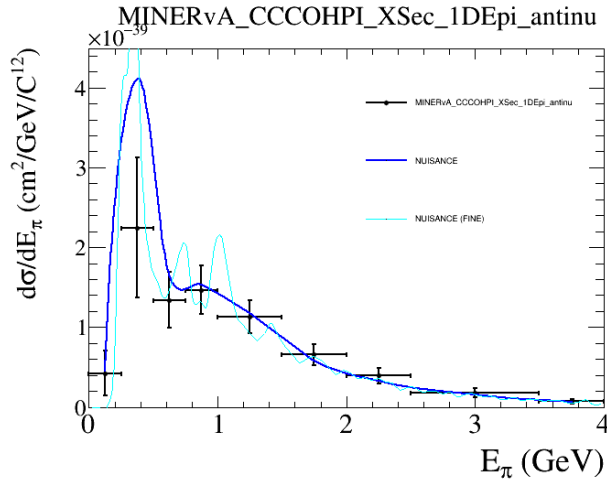- χ^2/**NDOF** : 0.910517

MINERvA_CCCOHPI_XSec_1Dth_antinu
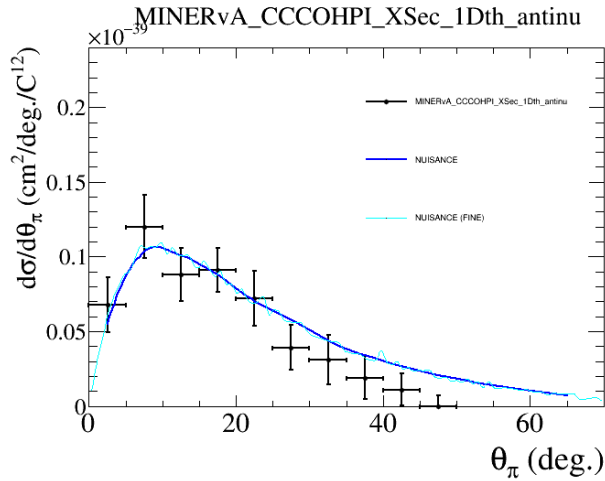
MINERvA_CCCOHPI_XSec_1Dth_antinu_settings

- **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_CCinc_XSec_1Dx_ratio_C12_CH

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
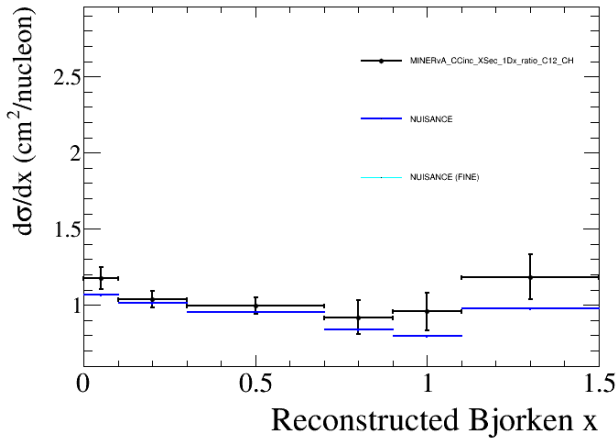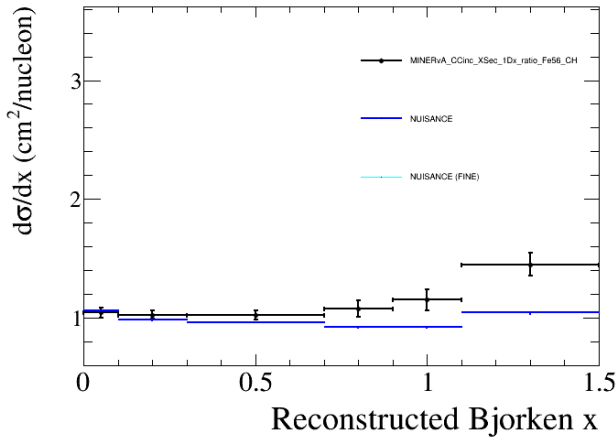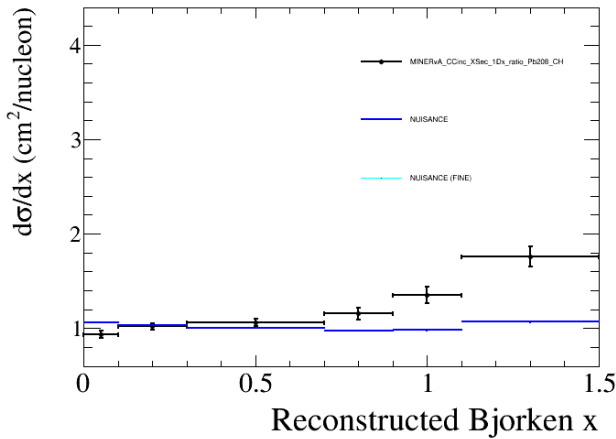
MINERvA_CCinc_XSec_1Dx_ratio_Fe56_CH_settings

- **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

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** : $d\sigma/dx$ (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_Pb208_CH
- χ^2 : 6.68334e+75
- **NDOF** : 6
- χ^2**/NDOF** : 1.11389e+75

MINERvA_CCinc_XSec_1DEnu_ratio_C12_CH

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.r
- **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_C12_CH
- χ^2 : 1.87185e+75
- **NDOF** : 8
- χ^2/**NDOF** : 2.33981e+74

MINERvA_CCinc_XSec_1DEnu_ratio_Fe56_CH

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_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_Fe56_CH
- χ^2 : 3.20108e+74
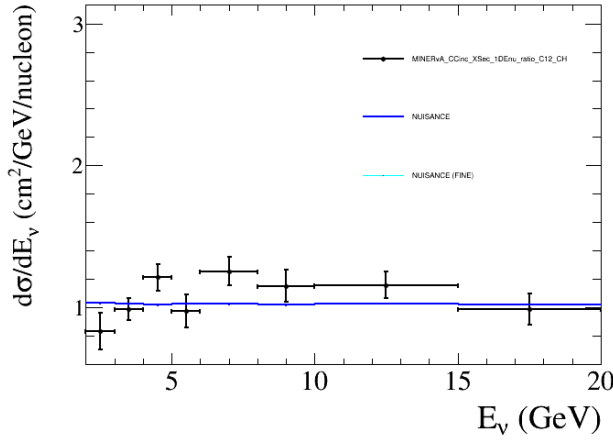- **NDOF** : 8
- χ^2/**NDOF** : 4.00136e+73

MINERvA_CCinc_XSec_1DEnu_ratio_Pb208_CH

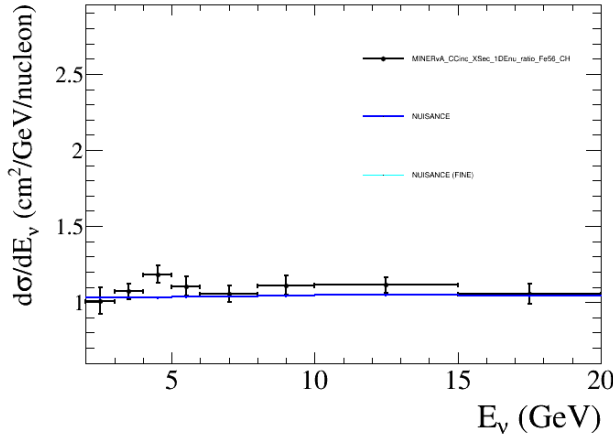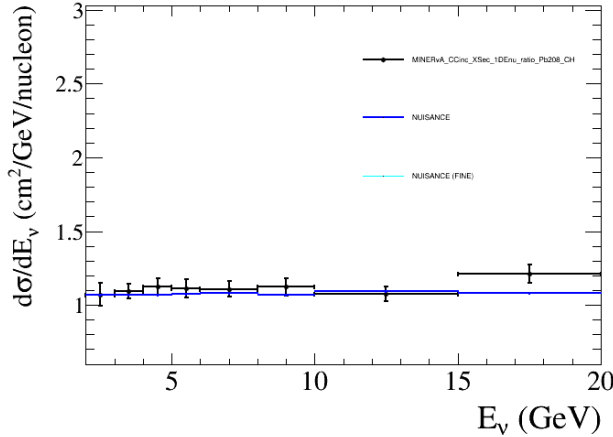### MINERvA_CCinc_XSec_1DEnu_ratio_Pb208_CH_settings

- **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