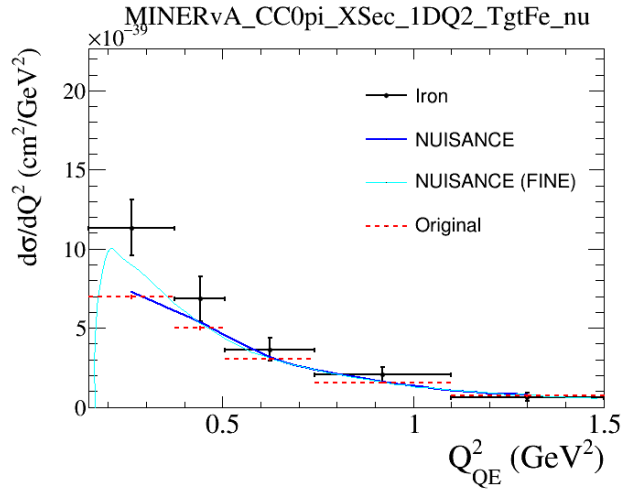


MINERvA_CC0pi_XSec_1DQ2_TgtC_nu_settings

```

• name : MINERvA_CC0pi_XSec_1DQ2_TgtC_nu
• input : GENIE:@GENIE_DIR/gntp.R-2_8_6.OfficialDefault.Default.MINERvA_fhc_numu.C.2500000.5.prepared.r
• type : DEFAULT
• description :
  |-> MINERvA_CC0pi_XSec_1DQ2_Tgt_nu sample.
  |-> Target: Either C, CH, Fe, Pb
  |-> Flux: MINERvA Forward Horn numu
  |-> Signal: Any event with 1 muon, 1 proton p>450, no pions
• xtitle : Q²QE (GeV²)
• ytitle : dσ/dQ² (cm²/GeV²)
• default_types : FIX,FREE,SHAPE/DIAG/NORM
• allowed_types : FIX/DIAG
• enu_min : 0
• enu_max : 100
• title : MINERvA_CC0pi_XSec_1DQ2_Tgt_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_CC0pi_XSec_1DQ2_TgtC_nu
• χ² : 5.84509
• NDOF : 5
• χ²/NDOF : 1.16902

```

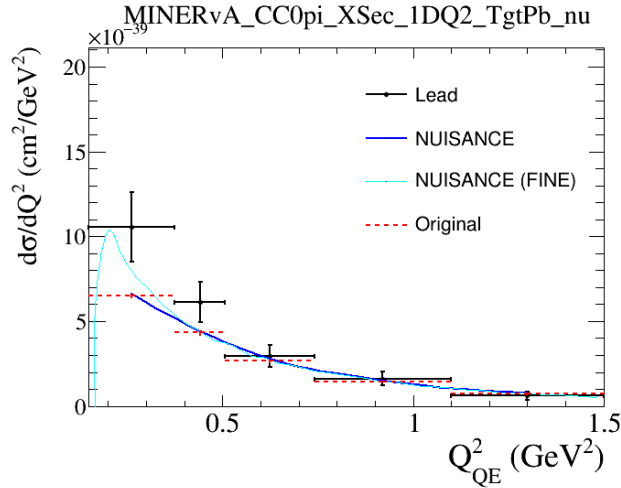


MINERvA_CC0pi_XSec_1DQ2_TgtFe_nu_settings

```

• name : MINERvA_CC0pi_XSec_1DQ2_TgtFe_nu
• input : GENIE:@GENIE_DIR/gntp.R-2_8_6.OfficialDefault.Default.MINERvA_fhc_numu.Fe.2500000.6.prepared.r
• type : DEFAULT
• description :
  |-> MINERvA_CC0pi_XSec_1DQ2_Tgt_nu sample.
  |-> Target: Either C, CH, Fe, Pb
  |-> Flux: MINERvA Forward Horn numu
  |-> Signal: Any event with 1 muon, 1 proton p>450, no pions
• xtitle : Q²QE (GeV²)
• ytitle : dσ/dQ² (cm²/GeV²)
• default_types : FIX,FREE,SHAPE/DIAG/NORM
• allowed_types : FIX/DIAG
• enu_min : 0
• enu_max : 100
• title : MINERvA_CC0pi_XSec_1DQ2_Tgt_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_CC0pi_XSec_1DQ2_TgtFe_nu
• χ² : 10.7643
• NDOF : 5
• χ²/NDOF : 2.15285

```

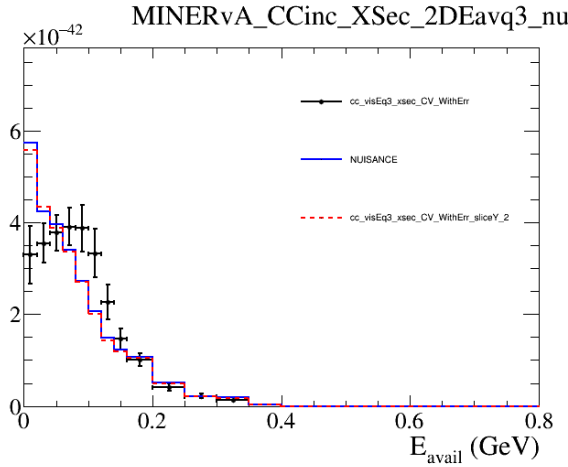
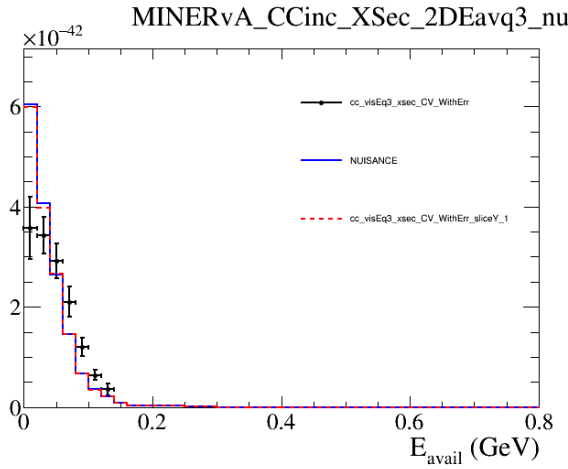
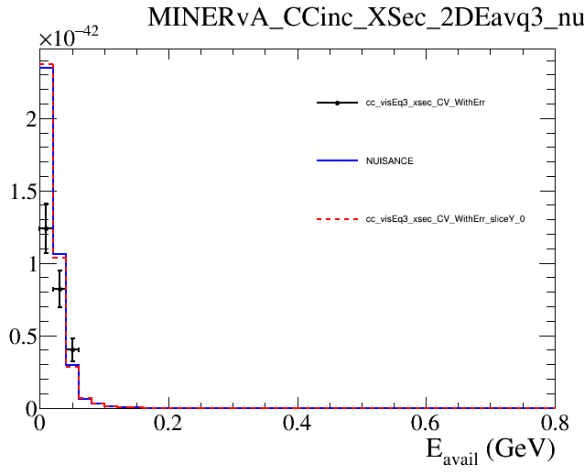


MINERvA_CC0pi_XSec_1DQ2_TgtPb_nu_settings

```

• name : MINERvA_CC0pi_XSec_1DQ2_TgtPb_nu
• input : GENIE:@GENIE_DIR/gntp.R-2_8_6.OfficialDefault.Default.MINERvA_fhc_numu.Pb.2500000.7.prepared.r
• type : DEFAULT
• description :
  |-> MINERvA_CC0pi_XSec_1DQ2_Tgt_nu sample.
  |-> Target: Either C, CH, Fe, Pb
  |-> Flux: MINERvA Forward Horn numu
  |-> Signal: Any event with 1 muon, 1 proton p>450, no pions
• xtitle : Q²QE (GeV²)
• ytitle : dσ/dQ² (cm²/GeV²)
• default_types : FIX,FREE,SHAPE/DIAG/NORM
• allowed_types : FIX/DIAG
• enu_min : 0
• enu_max : 100
• title : MINERvA_CC0pi_XSec_1DQ2_Tgt_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_CC0pi_XSec_1DQ2_TgtPb_nu
• χ² : 5.43915
• NDOF : 5
• χ²/NDOF : 1.08783

```



MINERvA_CCinc_XSec_2DEavq3_nu_settings

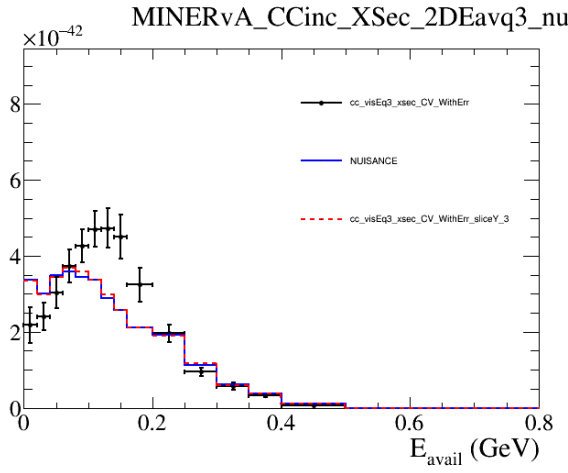
- name** : MINERvA_CCinc_XSec_2DEavq3_nu
- input** : GENIE:@GENIE_DIR/gntp.R-2_8_6.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type** : DEFAULT
- description** :
 |--> MINERvA_CCinc_XSec_2DEavq3_nu sample.
 |--> Target: CH
 |--> Flux: MINERvA Medium Energy FHC numu
 |--> Signal: CC-inclusive with theta < 20deg
- xtitle** : q_1 (GeV)
- ytitle** : $E_{\nu_{avail}}$ (GeV)
- ztitle** : $d^2\sigma/dq_1 dE_{\nu_{avail}}$ (cm^2/GeV^2)
- default_types** : FIX,FREE,SHAPE/FULL,DIAG/MASK
- allowed_types** : FIX/FULL
- enu_min** : 2
- enu_max** : 6
- title** : MINERvA_CCinc_XSec_2DEavq3_nu
- data** : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- covar** : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- map** : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- originalname** : MINERvA_CCinc_XSec_2DEavq3_nu
- χ^2 : 2152.07
- NDOF** : 67
- χ^2/NDOF : 32.1204

MINERvA_CCinc_XSec_2DEavq3_nu_settings

- name** : MINERvA_CCinc_XSec_2DEavq3_nu
- input** : GENIE:@GENIE_DIR/gntp.R-2_8_6.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type** : DEFAULT
- description** :
 |--> MINERvA_CCinc_XSec_2DEavq3_nu sample.
 |--> Target: CH
 |--> Flux: MINERvA Medium Energy FHC numu
 |--> Signal: CC-inclusive with theta < 20deg
- xtitle** : q_1 (GeV)
- ytitle** : $E_{\nu_{avail}}$ (GeV)
- ztitle** : $d^2\sigma/dq_1 dE_{\nu_{avail}}$ (cm^2/GeV^2)
- default_types** : FIX,FREE,SHAPE/FULL,DIAG/MASK
- allowed_types** : FIX/FULL
- enu_min** : 2
- enu_max** : 6
- title** : MINERvA_CCinc_XSec_2DEavq3_nu
- data** : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- covar** : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- map** : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- originalname** : MINERvA_CCinc_XSec_2DEavq3_nu
- χ^2 : 2152.07
- NDOF** : 67
- χ^2/NDOF : 32.1204

MINERvA_CCinc_XSec_2DEavq3_nu_settings

- name** : MINERvA_CCinc_XSec_2DEavq3_nu
- input** : GENIE:@GENIE_DIR/gntp.R-2_8_6.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
- type** : DEFAULT
- description** :
 |--> MINERvA_CCinc_XSec_2DEavq3_nu sample.
 |--> Target: CH
 |--> Flux: MINERvA Medium Energy FHC numu
 |--> Signal: CC-inclusive with theta < 20deg
- xtitle** : q_1 (GeV)
- ytitle** : $E_{\nu_{avail}}$ (GeV)
- ztitle** : $d^2\sigma/dq_1 dE_{\nu_{avail}}$ (cm^2/GeV^2)
- default_types** : FIX,FREE,SHAPE/FULL,DIAG/MASK
- allowed_types** : FIX/FULL
- enu_min** : 2
- enu_max** : 6
- title** : MINERvA_CCinc_XSec_2DEavq3_nu
- data** : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- covar** : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- map** : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
- originalname** : MINERvA_CCinc_XSec_2DEavq3_nu
- χ^2 : 2152.07
- NDOF** : 67
- χ^2/NDOF : 32.1204

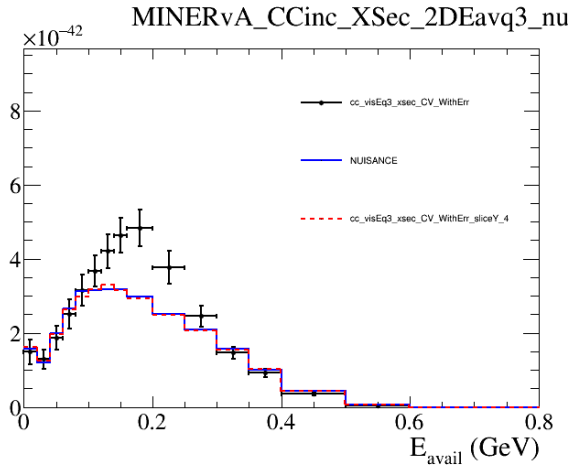


MINERvA_CCinc_XSec_2DEavq3_nu_settings

```

• name : MINERvA_CCinc_XSec_2DEavq3_nu
• input : GENIE:@GENIE_DIR/gntp.R-2_8_6.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
• type : DEFAULT
• description :
  |-> MINERvA_CCinc_XSec_2DEavq3_nu sample.
  |-> Target: CH
  |-> Flux: MINERvA Medium Energy FHC numu
  |-> Signal: CC-inclusive with theta < 20deg
• xtitle :  $q_1$  (GeV)
• ytitle :  $E_{\nu}^{\text{avail}}$  (GeV)
• ztitle :  $d^2\sigma/dq_1 dE_{\nu}^{\text{avail}}$  ( $\text{cm}^2/\text{GeV}^2$ )
• default_types : FIX,FREE,SHAPE/FULL,DIAG/MASK
• allowed_types : FIX/FULL
• enu_min : 2
• enu_max : 6
• title : MINERvA_CCinc_XSec_2DEavq3_nu
• data : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
• covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
• map : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
• originalname : MINERvA_CCinc_XSec_2DEavq3_nu
•  $\chi^2$  : 2152.07
• NDOF : 67
•  $\chi^2/\text{NDOF}$  : 32.1204

```

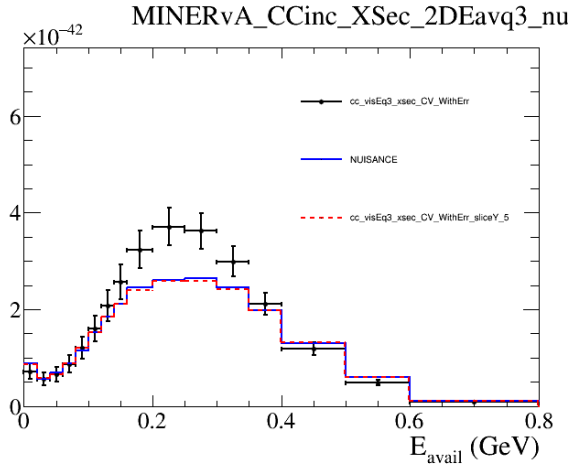


MINERvA_CCinc_XSec_2DEavq3_nu_settings

```

• name : MINERvA_CCinc_XSec_2DEavq3_nu
• input : GENIE:@GENIE_DIR/gntp.R-2_8_6.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
• type : DEFAULT
• description :
  |-> MINERvA_CCinc_XSec_2DEavq3_nu sample.
  |-> Target: CH
  |-> Flux: MINERvA Medium Energy FHC numu
  |-> Signal: CC-inclusive with theta < 20deg
• xtitle :  $q_1$  (GeV)
• ytitle :  $E_{\nu}^{\text{avail}}$  (GeV)
• ztitle :  $d^2\sigma/dq_1 dE_{\nu}^{\text{avail}}$  ( $\text{cm}^2/\text{GeV}^2$ )
• default_types : FIX,FREE,SHAPE/FULL,DIAG/MASK
• allowed_types : FIX/FULL
• enu_min : 2
• enu_max : 6
• title : MINERvA_CCinc_XSec_2DEavq3_nu
• data : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
• covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
• map : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
• originalname : MINERvA_CCinc_XSec_2DEavq3_nu
•  $\chi^2$  : 2152.07
• NDOF : 67
•  $\chi^2/\text{NDOF}$  : 32.1204

```



MINERvA_CCinc_XSec_2DEavq3_nu_settings

```

• name : MINERvA_CCinc_XSec_2DEavq3_nu
• input : GENIE:@GENIE_DIR/gntp.R-2_8_6.OfficialDefault.Default.MINERvA_fhc_numu.CH.2500000.1.prepared
• type : DEFAULT
• description :
  |-> MINERvA_CCinc_XSec_2DEavq3_nu sample.
  |-> Target: CH
  |-> Flux: MINERvA Medium Energy FHC numu
  |-> Signal: CC-inclusive with theta < 20deg
• xtitle :  $q_1$  (GeV)
• ytitle :  $E_{\nu}^{\text{avail}}$  (GeV)
• ztitle :  $d^2\sigma/dq_1 dE_{\nu}^{\text{avail}}$  ( $\text{cm}^2/\text{GeV}^2$ )
• default_types : FIX,FREE,SHAPE/FULL,DIAG/MASK
• allowed_types : FIX/FULL
• enu_min : 2
• enu_max : 6
• title : MINERvA_CCinc_XSec_2DEavq3_nu
• data : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
• covar : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
• map : /data/stowell/NIWG/NUISANCEMC/minerva_tuning/sample_validations/minerva-validation-061117/builds/n
• originalname : MINERvA_CCinc_XSec_2DEavq3_nu
•  $\chi^2$  : 2152.07
• NDOF : 67
•  $\chi^2/\text{NDOF}$  : 32.1204

```