

Re-weighting of GENIE dials using the NUISANCE tool

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August 12, 2017

Table: nuiscomp 50k events

Dial	Execution time	Likelihood Joint FCN
nominal	20s	350.246
FrCEx_N	23s	350.246
FrInel_N	24s	350.246
FrAbs_N	23s	350.246
FrCEx_pi	23s	350.246
FrInel_pi	24s	350.246
FrAbs_pi	25s	350.246
FrElas_N	25s	350.246
FrPiProd_N	22s	350.246
FrElas_pi	25s	350.246
FrPiProd_pi	26s	350.246
MFP_N	143s	337.662
MFP_pi	242s	309.801
FormZone	295s	337.248

card

genie_parameter <param> -1.0 -3.0 3.0 1.0 FIX

```
sample MINERvA_CC1pip_XSec_1DTpi_nu_fluxcorr GENIE:/PATH/gntp.MINERvA_fhc_numu.CH.2500000.1.ghep.root
sample MINERvA_CC1pip_XSec_1Dth_nu_2017 GENIE:/PATH/gntp.MINERvA_fhc_numu.CH.2500000.1.ghep.root
sample MINERvA_CC1pip_XSec_1Dpmu_nu_2017 GENIE:/PATH/gntp.MINERvA_fhc_numu.CH.2500000.1.ghep.root
sample MINERvA_CC1pip_XSec_1Dthmu_nu_2017 GENIE:/PATH/gntp.MINERvA_fhc_numu.CH.2500000.1.ghep.root
sample MINERvA_CC1pip_XSec_1DQ2_nu_2017 GENIE:/PATH/gntp.MINERvA_fhc_numu.CH.2500000.1.ghep.root
sample MINERvA_CC1pip_XSec_1Denu_nu_2017 GENIE:/PATH/gntp.MINERvA_fhc_numu.CH.2500000.1.ghep.root
```