

## Jet Mass with Pythia 8 status

What is done:

- ▶ Jet mass predictions with Pythia8
- ▶ Effects of ISR - FSR - MPI - hadronization, for both groomed and ungroomed jet mass.
- ▶ Monash tune:  
Tune:ee = 7 !  
Tune:pp = 18 !
- ▶ NNPDF2.3 LO (default)

What is planned:

- ▶ Use full CUETP8M1 tune & NNPDF3.0 LO.

Several differences with Monash tune. In CUETP8M1:

- ▶ MultipartonInteractions:pT0Ref = 2.402 (= 2.280 in Monash)
- ▶ MultipartonInteractions:ecmPow = 0.252 (= 0.215 in Monash)
- ▶ MultipartonInteractions:expPow = 1.6 (= 1.85 in Monash)

## Issue with NNPDF30\_lo\_as\_0130

*This works:*

Tune:ee = 7 ! For 4C

Tune:pp = 18 ! "Tune 4C"

*This does not work:*

Tune:ee = 7 ! For 4C

Tune:pp = 18 ! "Tune 4C"

PDF:pSet = LHAPDF6:NNPDF30\_lo\_as\_0130

→ *no yoda files are produced.*

## Settings

- ▶ Pythia8, LHAPDF, HepMC are compiled with gcc6.2.0
- ▶ NNPDF30\_lo\_as\_0130 is placed in LHAPDF/share/LHAPDF

# Error

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```
Rivet 3.1.2 running on machine node33-6.wn.ihe.ac.be (x86_64) at 2020-11-04 18:39:18
terminate called after throwing an instance of 'LHAPDF::ReadError'
  what(): Info file not found for PDF set 'NNPDF30_lo_as_0130'
streaming input: end of stream found setting badbit.
Could not read from '/tmp/Dijet_Jetmass_CUETP8M1_Nev10-NNPDFlo30-gcc620-5_5.dat_5' (error=basic_ios::clear)
/var/torque/mom_priv/jobs/44194360-5.cream02.ihe.ac.be.SC: line 48: 111338 Aborted          ./main31 $HEPMCOUT > pythia_${name}_${nfile}.out
cp: cannot stat 'yoda_Dijet_Jetmass_CUETP8M1_Nev10-NNPDFlo30-gcc620-5_5.yoda': No such file or directory
~
```