

PYTHIA tuning for the p+p 200 GeV simulation

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The PYTHIA tune for p+p 200 GeV

PYTHIA tune: p+p 200 GeV

```
pythia.readString("HardQCD:all = on");  
pythia.readString("TimeShower:alphaSvalue = 0.18");  
pythia.readString("PhaseSpace:pTHatMin = 1.3");  
pythia.readString("Beams:eCM = 200.");
```

MultipleInteractions: Default tune

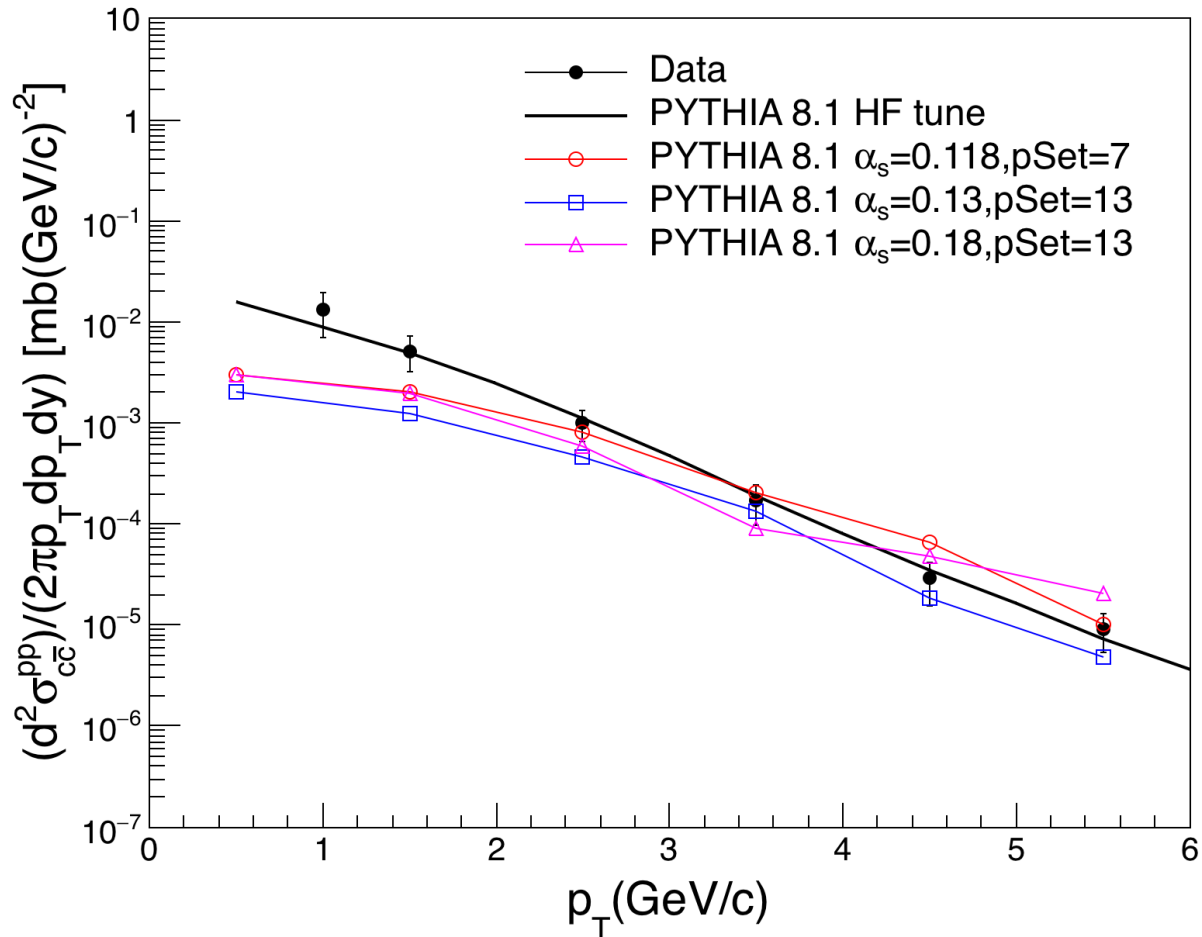
Reference: T. Sjöstrand and M. van Zijl, Phys. Rev. D 36, 2019

The PYTHIA tune for p+p 200 GeV

Re-generate samples with:

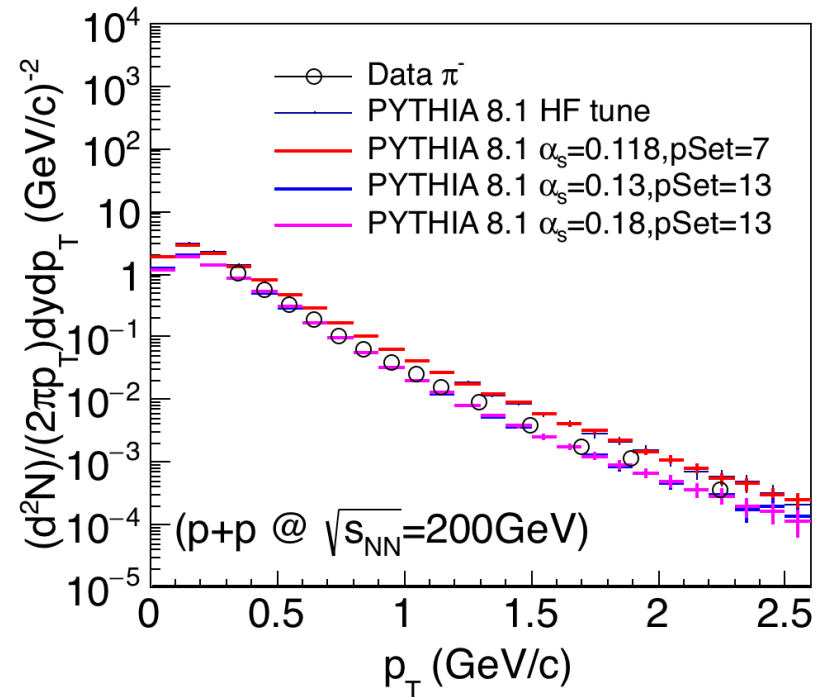
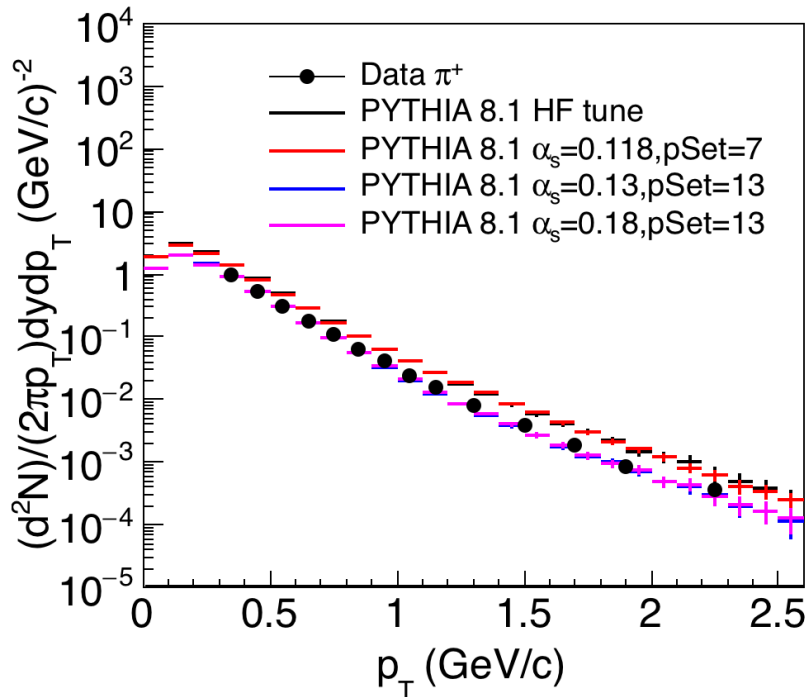
- 2 PDFs: CTEQ6L and NNPDF2.3
- **SoftQCD: inelastic = on**
- MPI K-factor: 1.0
- 3 Alpha_s: **alpha_s(M_Z) = 0.1180 for CTEQ6L, 0.130 for NNPDF2.3, 0.180 for NNPDF2.3**

The charm spectrum



STAR Data: Phys. Rev. D 86, 072013

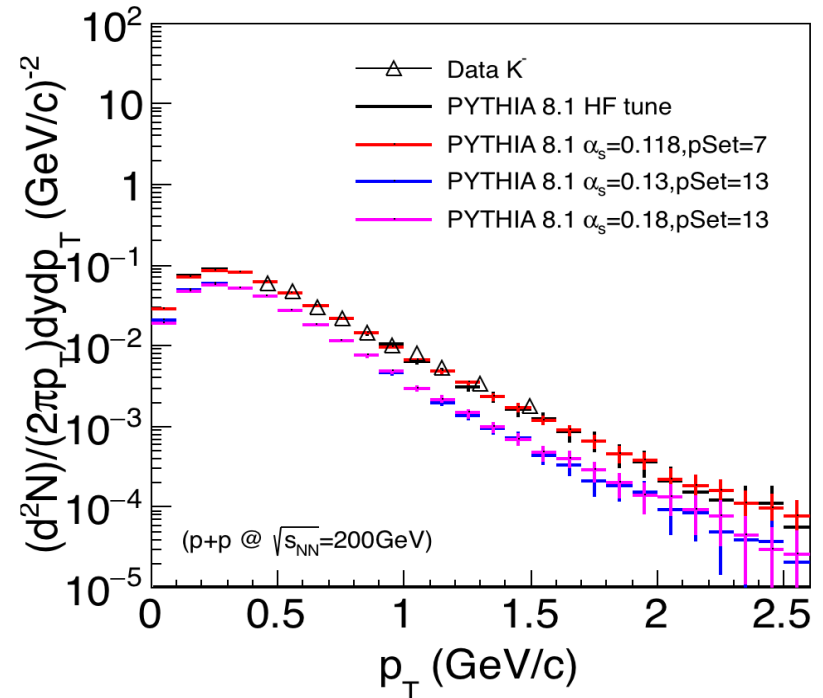
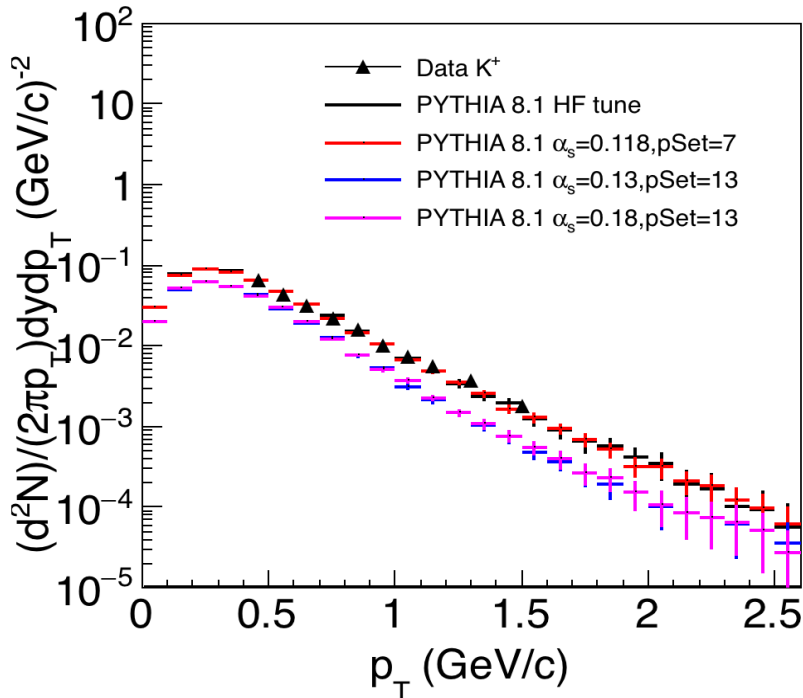
The identified particle spectrum



Pion data from STAR publication:

<https://doi.org/10.1016/j.physletb.2005.04.041>

The identified particle spectrum



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Thanks!

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