

1

## 2      **Strange particle in jets and underlying events with different models**

### 3      **1    Simulate with PYTHIA 8 sQCD with CR1 and rope**

#### 4      **Parameters**

5    Beams:idA = 2212  
6    Beams:idB = 2212  
7    Main:numberOfEvents = 1001  
8    Beams:eCM = 13000.  
9    SoftQCD:all = on

10

#### 11     **CR**

12    MultiPartonInteractions:pT0Ref = 2.15  
13    BeamRemnants:remnantMode = 1  
14    BeamRemnants:saturation = 5  
15    ColourReconnection:reconnect = on  
16    ColourReconnection:mode = 1  
17    ColourReconnection:allowDoubleJunRem = off  
18    ColourReconnection:m0 = 0.3  
19    ColourReconnection:allowJunctions = on  
20    ColourReconnection:junctionCorrection = 1.2  
21    ColourReconnection:timeDilationMode = 2  
22    ColourReconnection:timeDilationPar = 0.18

23

#### 24     **Rope**

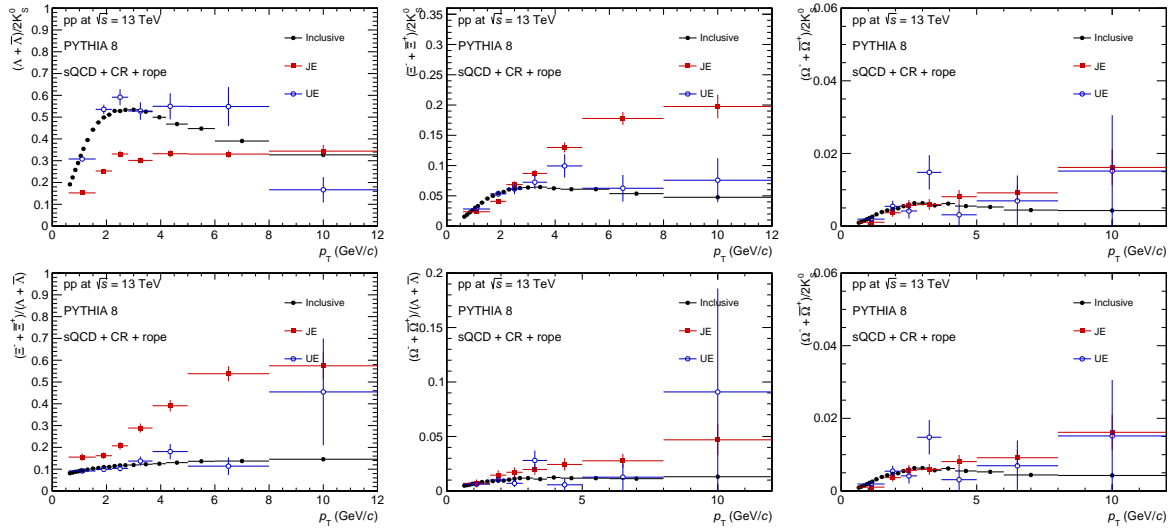
25    Ropewalk:RopeHadronization = on  
26    Ropewalk:doShoving = on  
27    Ropewalk:tInit = 1.5  
28    Ropewalk:deltat = 0.05  
29    Ropewalk:tShove = 0.1  
30    Ropewalk:gAmplitude = 0.

31

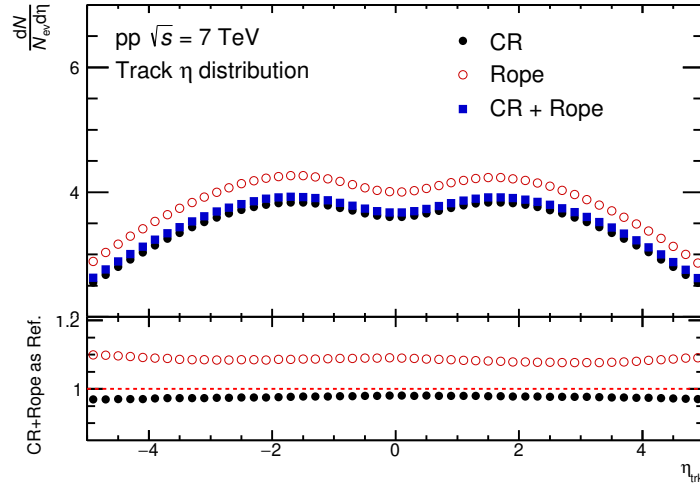
32    Ropewalk:doFlavour = on  
33    Ropewalk:r0 = 0.5  
34    Ropewalk:m0 = 0.2  
35    Ropewalk:beta = 0.1

36

37    *///  
38    PartonVertex:setVertex = on  
39    PartonVertex:protonRadius = 0.7  
40    PartonVertex:emissionWidth = 0.1*



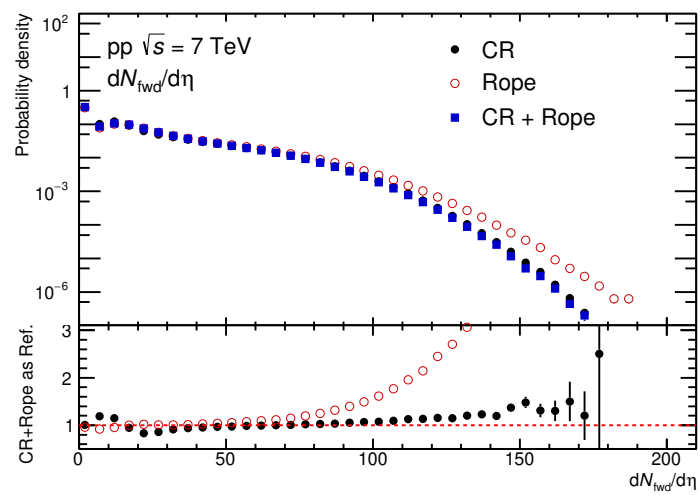
**Figure 1:** Baryon-to-meson(top) and baryon-to-baryon ratio with PYTHIA sQCD + CR1 + rope.



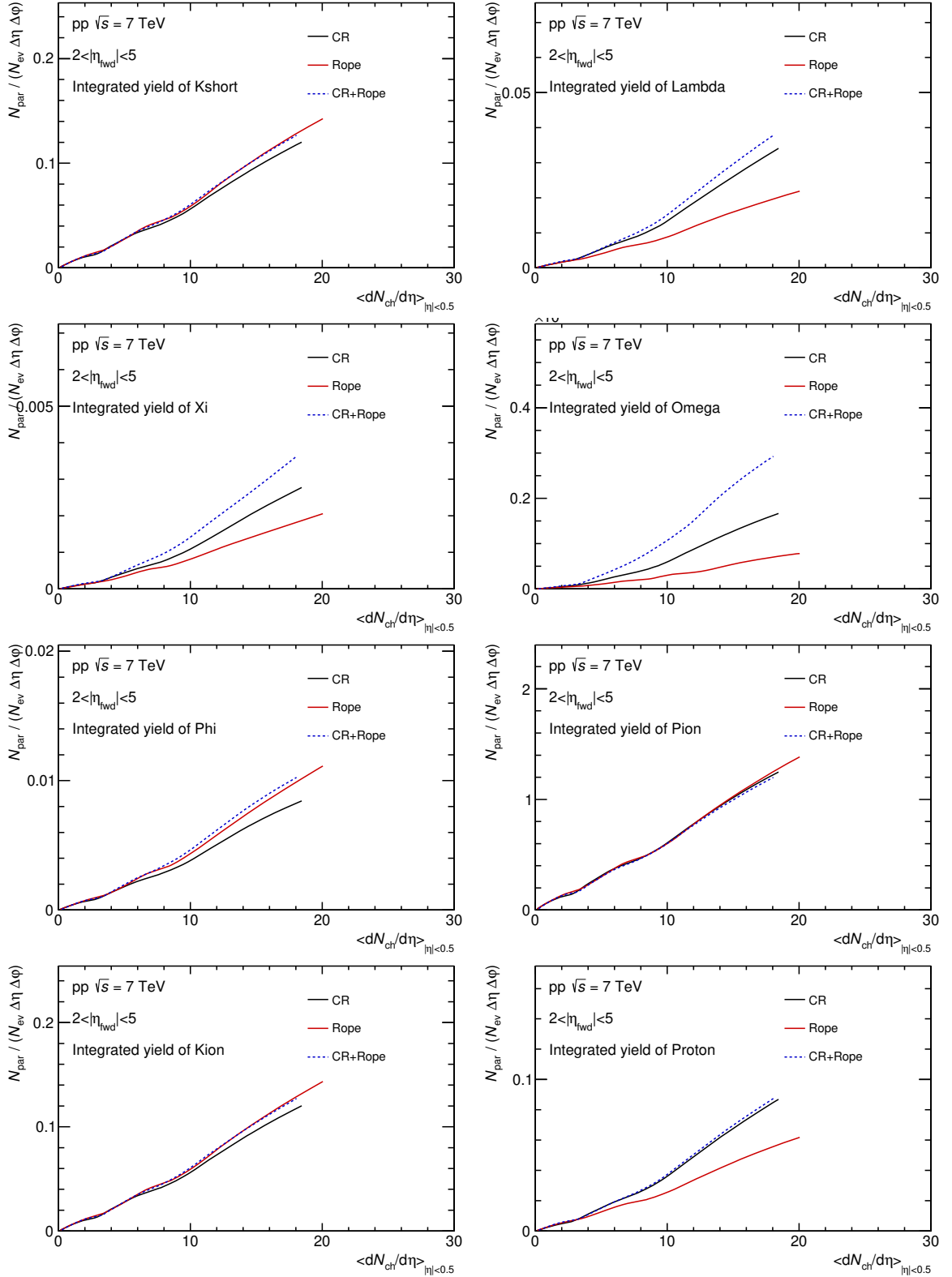
**Figure 2:** Track  $\eta$  distribution.

41 **2 Simulate with PYTHIA 8 sQCD with CR1 and rope**

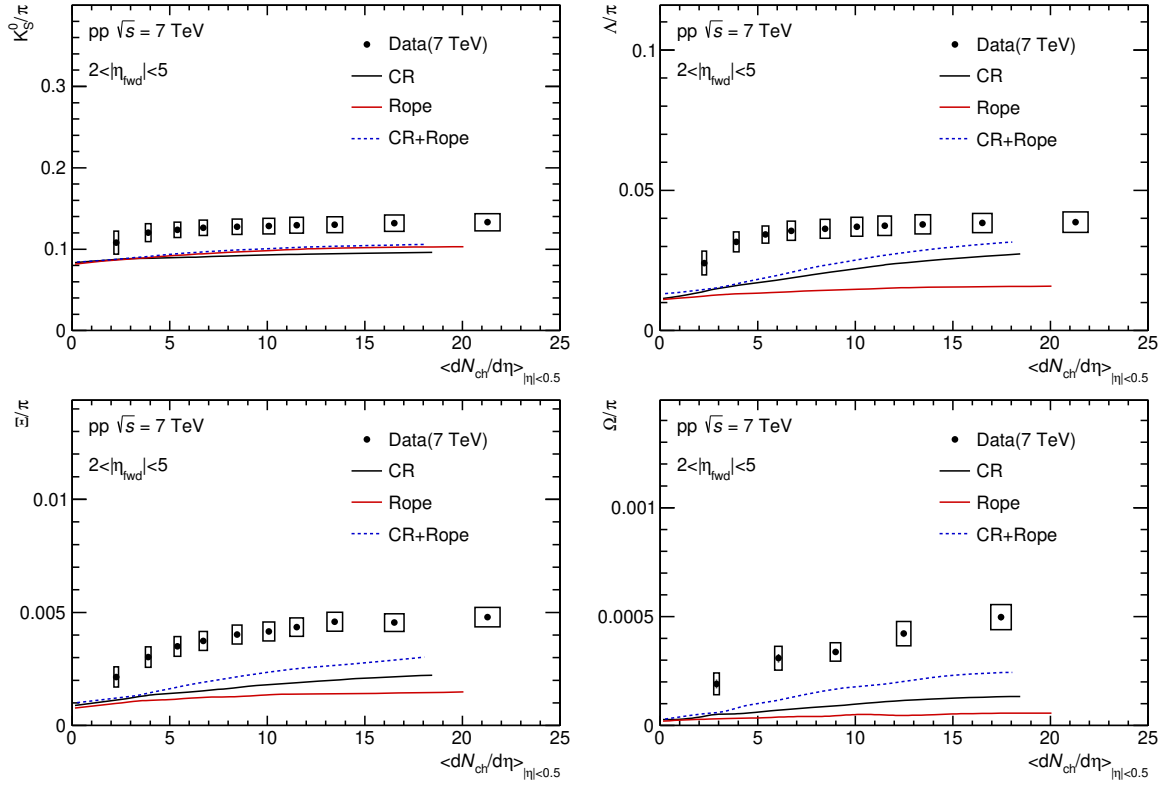
42 **References**



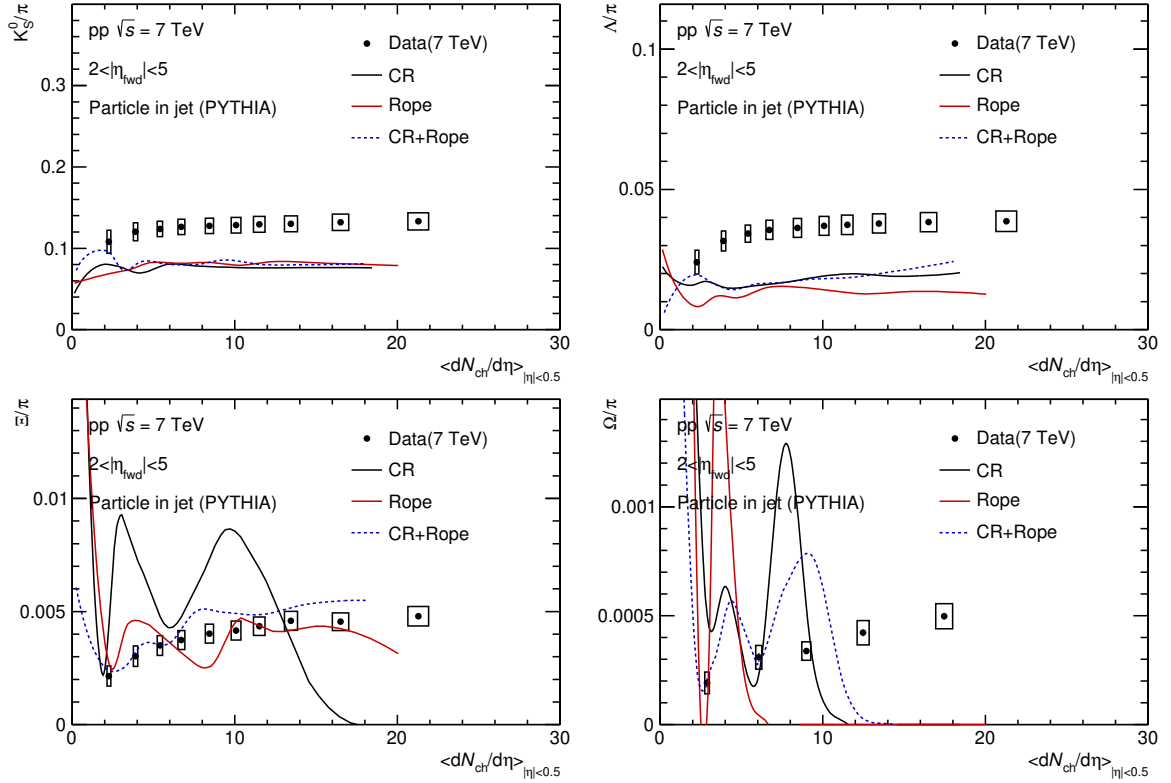
**Figure 3:** Forward track  $dN_{\text{fwd}}/d\eta$  distribution.



**Figure 4:** Inclusive integrated yields of particles with  $\langle dN_{ch}/d\eta \rangle$ .



**Figure 5:** Inclusive integrated yields ratios of strange particle to  $\pi$  with  $\langle dN_{\text{ch}}/d\eta \rangle$ .



**Figure 6:** Integrated yields ratios in jet of strange particle to  $\pi$  with  $\langle dN_{\text{ch}}/d\eta \rangle$ .