

# Transverse momentum and sphericity distributions for different $p_T$ cuts

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## Previous results

- sphericity distribution comparison for pp, p-Pb and Pb-Pb collisions for different multiplicity classes for  $p_T > 0.15$  GeV/c
- $\langle p_T \rangle(N_{ch})$  dependence for p-p collisions

## Further motivation

- plot the same  $\langle p_T \rangle(N_{ch})$  dependence for Pb-Pb and p-Pb collisions
- re-plot normalized  $p_T$  distributions with the corrected code
- run the code for other  $p_T$  cuts
- split multiplicity class into 2 parts and see differences
- plot multiplicity distributions for p-p, p-Pb and Pb-Pb collisions

I used the following set of cuts:  $|\eta| < 0.8$  and

- $p_T > 0.15 \text{ GeV}/c$ .
- $0.15 < p_T < 4 \text{ GeV}/c$
- $4 < p_T < 20 \text{ GeV}/c$

## mean $p_T$ dependence for p-p collisions

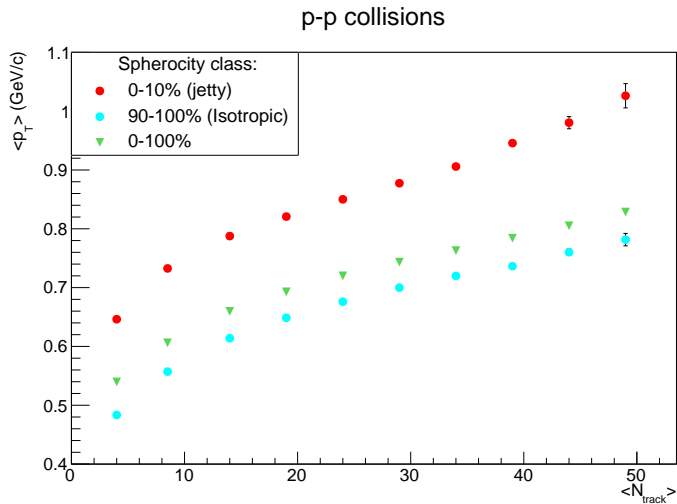


Figure 1: Average transverse momentum as a function of event multiplicity in pp collisions ( $p_T > 0.15$  GeV/c)

## mean $p_T$ dependence for Pb-Pb collisions

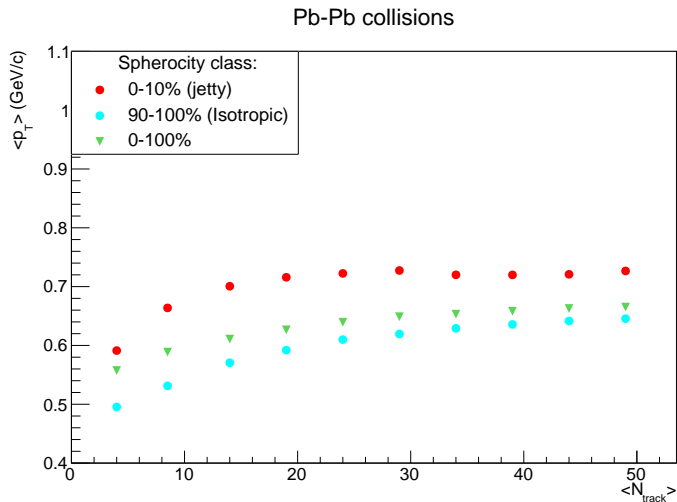


Figure 2: Average transverse momentum as a function of event multiplicity in Pb-Pb collisions ( $p_T > 0.15$  GeV/c)

## mean $p_T$ dependence for p-Pb collisions

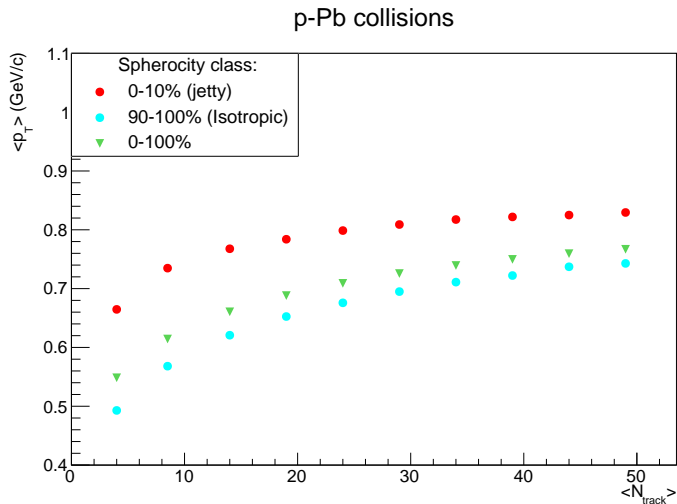


Figure 3: Average transverse momentum as a function of event multiplicity in p-Pb collisions ( $p_T > 0.15$  GeV/c)

mean  $p_T$  dependence for p-p collisions for  $0.15 < p_T < 4$  GeV/c

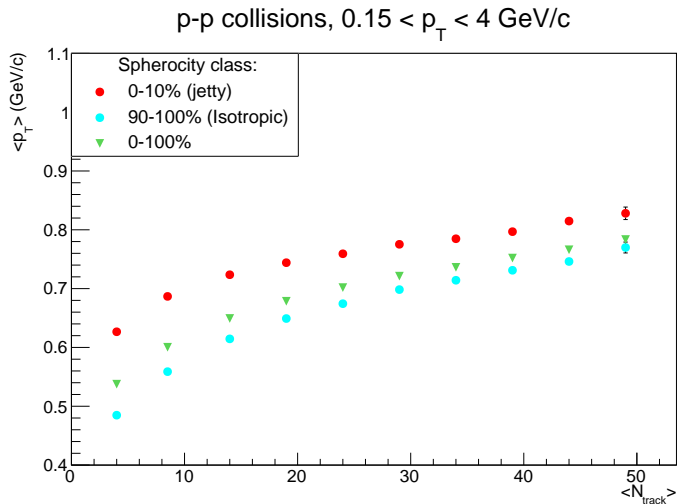


Figure 4: Average transverse momentum as a function of event multiplicity in pp collisions ( $0.15 < p_T < 4$  GeV/c)



mean  $p_T$  dependence for Pb-Pb collisions for  $0.15 < p_T < 4$  GeV/c

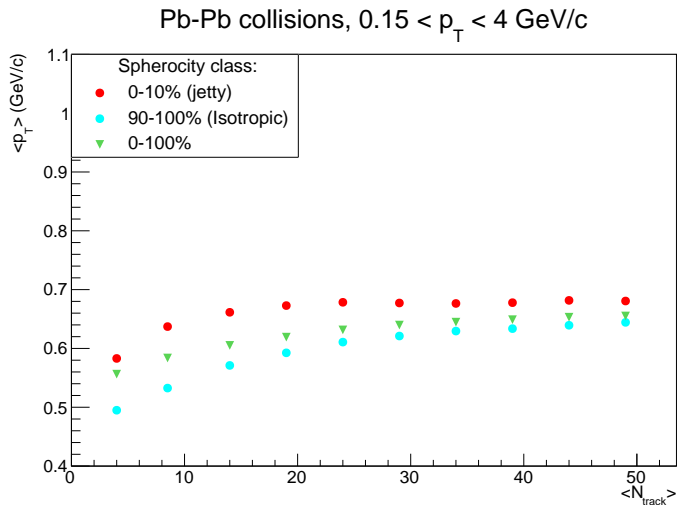


Figure 5: Average transverse momentum as a function of event multiplicity in Pb-Pb collisions (for  $0.15 < p_T < 4$  GeV/c)

mean  $p_T$  dependence for p-Pb collisions for  $0.15 < p_T < 4$  GeV/c

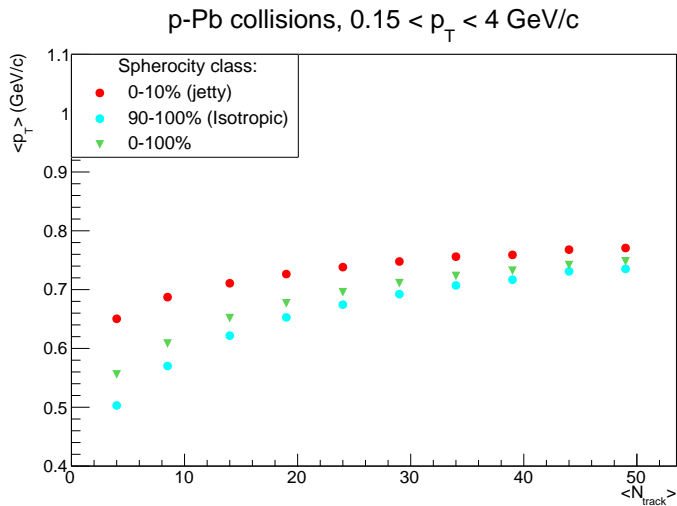


Figure 6: Average transverse momentum as a function of event multiplicity in p-Pb collisions (for  $0.15 < p_T < 4$  GeV/c)

## mean $p_T$ dependence for p-p collisions for $4 < p_T < 20$ GeV/c

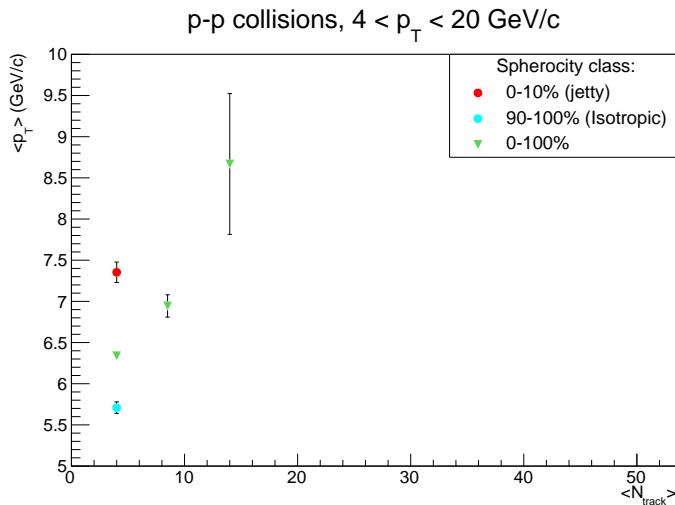


Figure 7: Average transverse momentum as a function of event multiplicity in pp collisions ( $4 < p_T < 20$  GeV/c)

mean  $p_T$  dependence for Pb-Pb collisions for  $4 < p_T < 20$  GeV/c

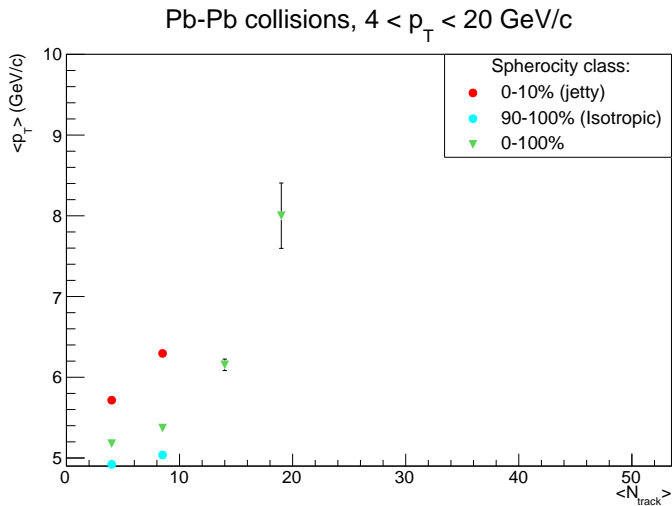


Figure 8: Average transverse momentum as a function of event multiplicity in Pb-Pb collisions (for  $4 < p_T < 20$  GeV/c)

mean  $p_T$  dependence for p-Pb collisions for  $4 < p_T < 20$  GeV/c

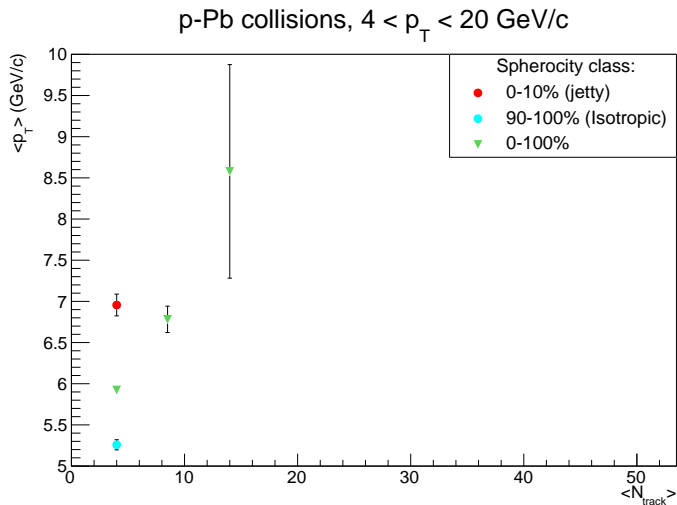
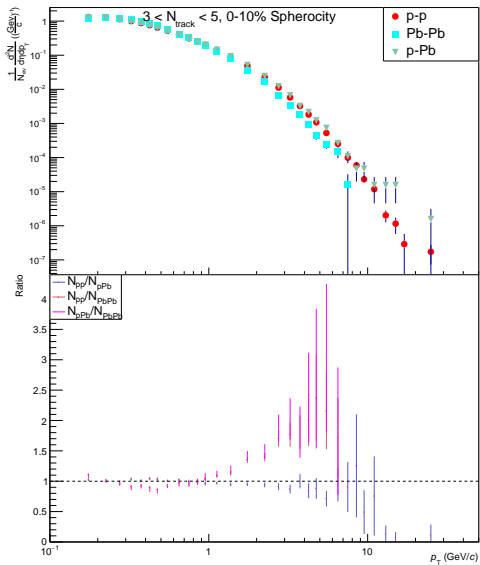
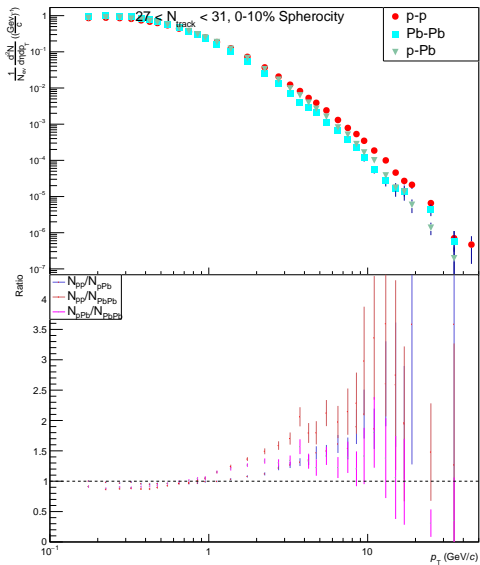


Figure 9: Average transverse momentum as a function of event multiplicity in p-Pb collisions (for  $4 < p_T < 20$  GeV/c)

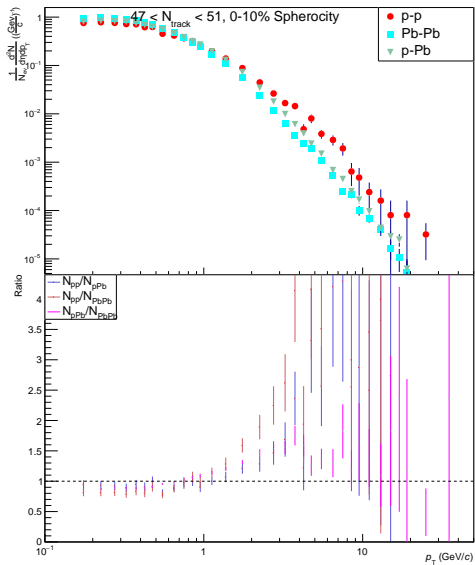
# normalized $p_T$ distributions for low multiplicity (jetty events)



# normalized $p_T$ distributions for middle multiplicity (jetty events)

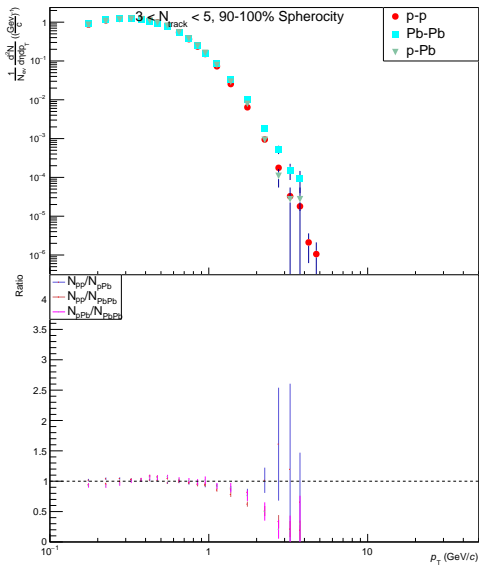


# normalized $p_T$ distributions for high multiplicity (jetty events)

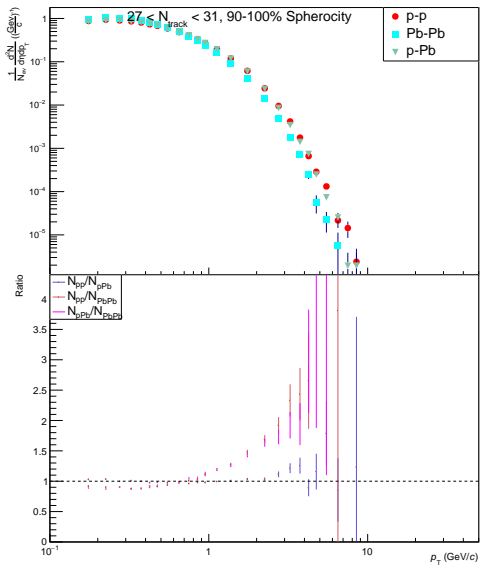




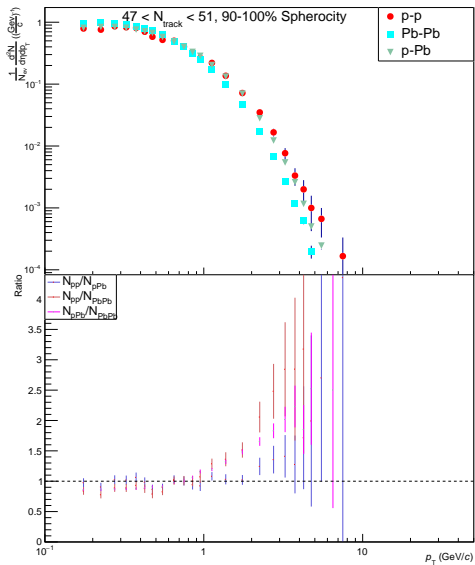
# normalized $p_T$ distributions for low multiplicity (isotropic events)



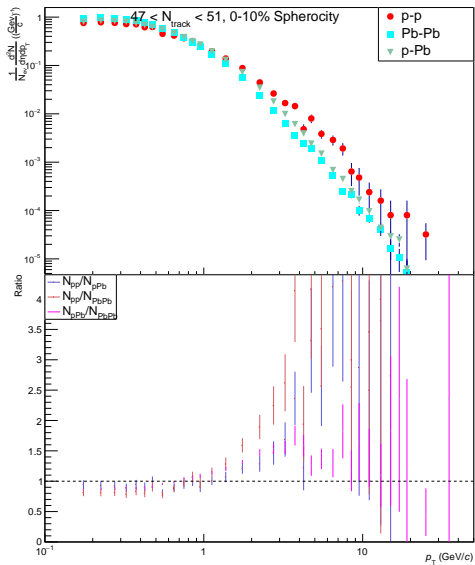
# normalized $p_T$ distributions for middle multiplicity (isotropic events)



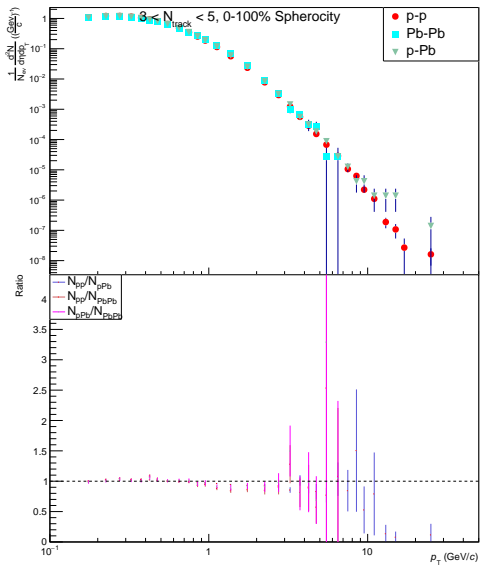
# normalized $p_T$ distributions for high multiplicity (isotropic events)



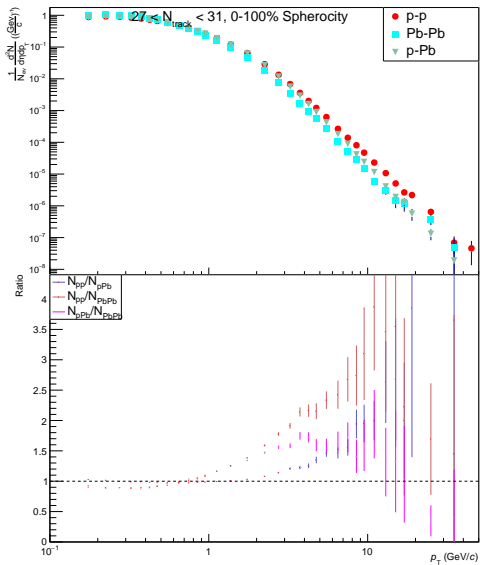
# normalized $p_T$ distributions for high multiplicity (jetty events)



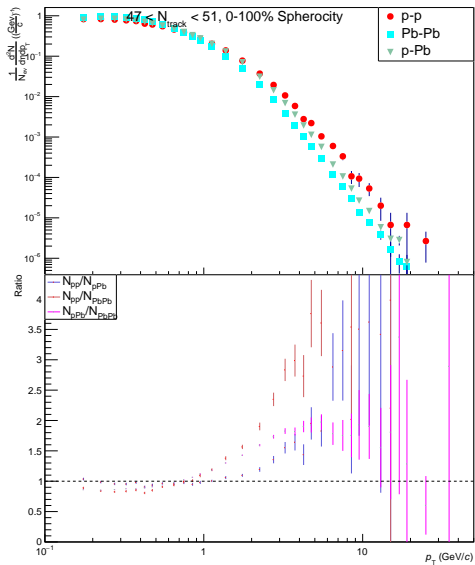
# normalized $p_T$ distributions for low multiplicity (all events)



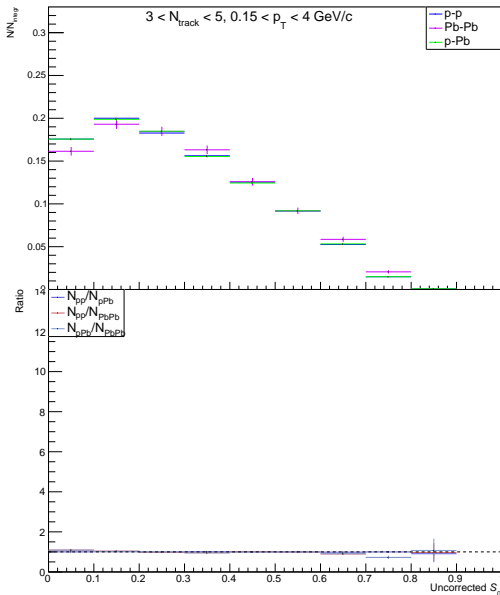
# normalized $p_T$ distributions for middle multiplicity (all events)



# normalized $p_T$ distributions for high multiplicity (all events)

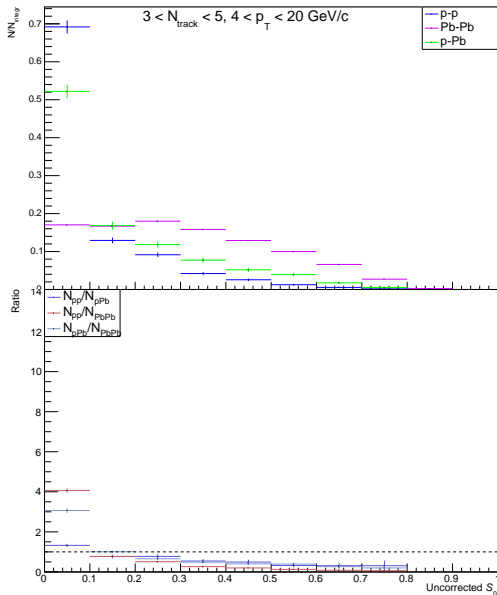


# Sphericity distributions and ratio of p-p and p-Pb for low multiplicity

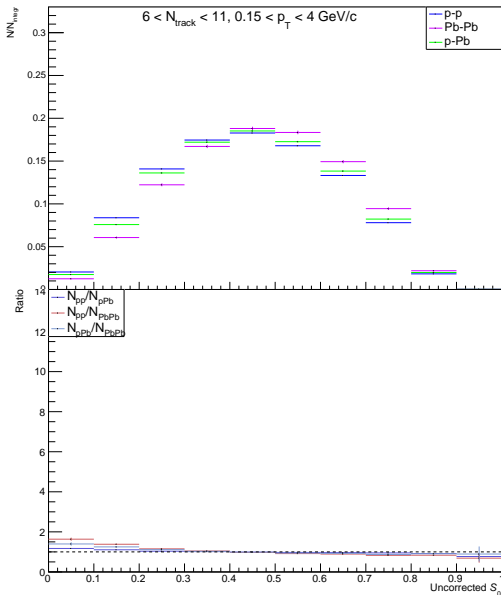




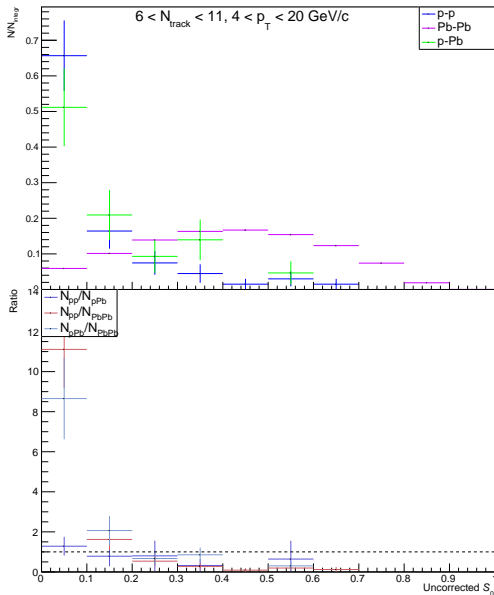
# Sphericity distributions and ratio of p-p and p-Pb for low multiplicity



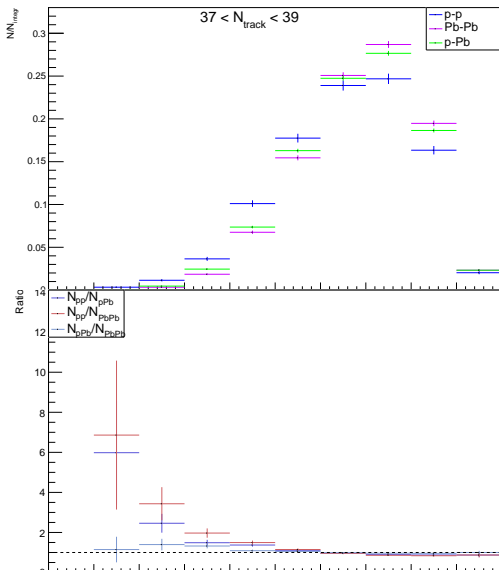
# Sphericity distributions and ratio of p-p and p-Pb for low multiplicity



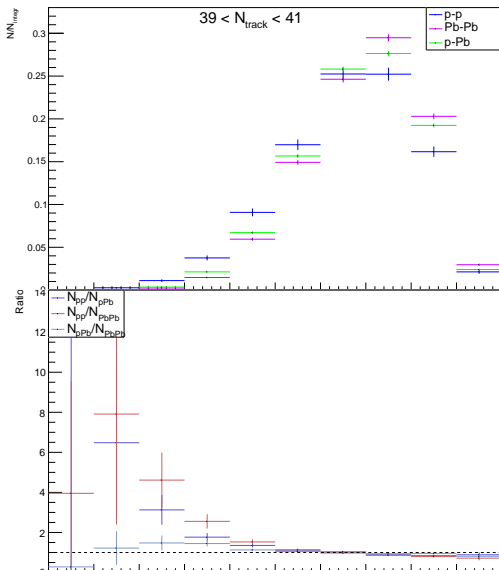
# Sphericity distributions and ratio of p-p and p-Pb for low multiplicity



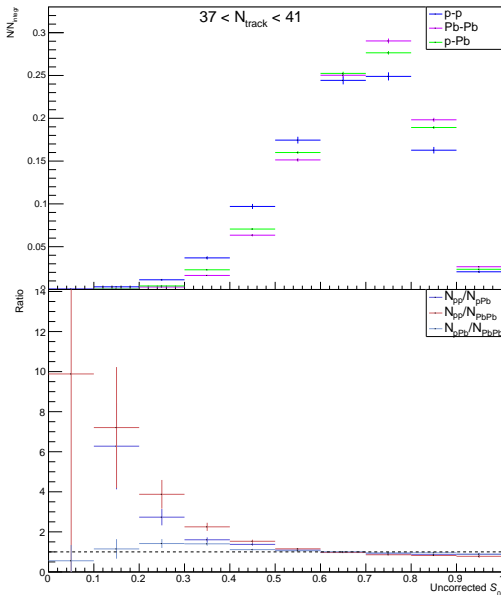
# Sphericity distributions and ratio of p-p and p-Pb for splitted multiplicity class



# Sphericity distributions and ratio of p-p and p-Pb for splitted multiplicity class



# Sphericity distributions and ratio of p-p and p-Pb for middle multiplicity



Thank you for your attention!