

# Transverse momentum for different spherocity classes

Tatiana Nikolaeva

Lomonosov Moscow State University

CERN Summer Student 2021

2021

## Previous results

- Spherocity distributions for pp, p-Pb and Pb-Pb collisions for different multiplicity classes
- $p_T$  distributions for different spherocity and multiplicity classes
- Problems with normalized distributions

## Further motivation

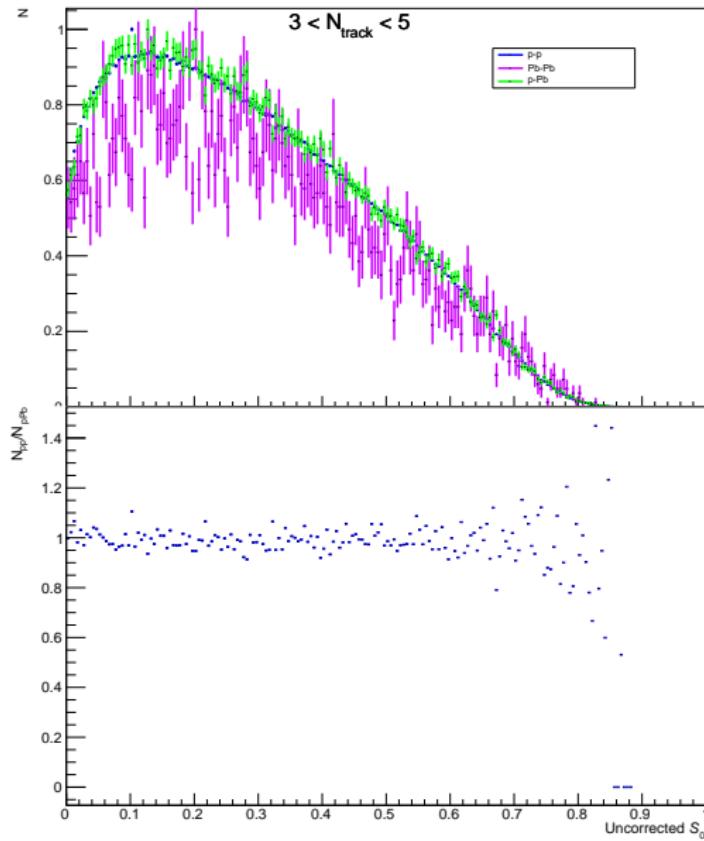
- it's interesting to compare spherocity distributions for p-p, Pb-Pb and p-Pb collisions
- we can study  $p_T$  distribution for each multiplicity and spherocity class (for jetty, isotropic and integrated spherocity)
- to study  $\langle p_T \rangle(N_{ch})$  dependence
- check other cuts of  $p_T$

## Calculation details

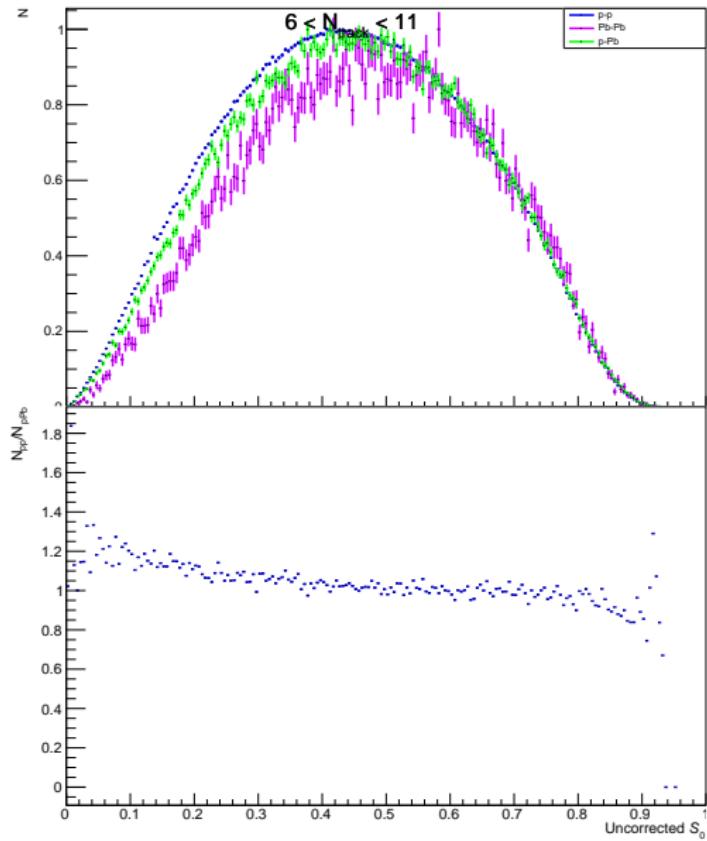
I used the following set of cuts:  $|\eta| < 0.8$  and

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

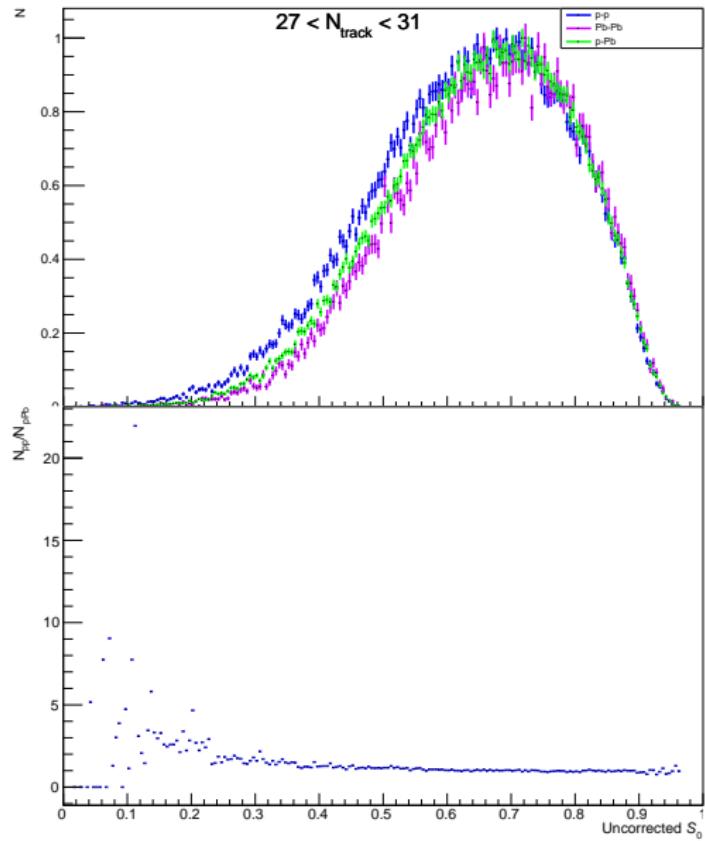
## Spherocity distributions and ratio of p-p and p-Pb for low multiplicity



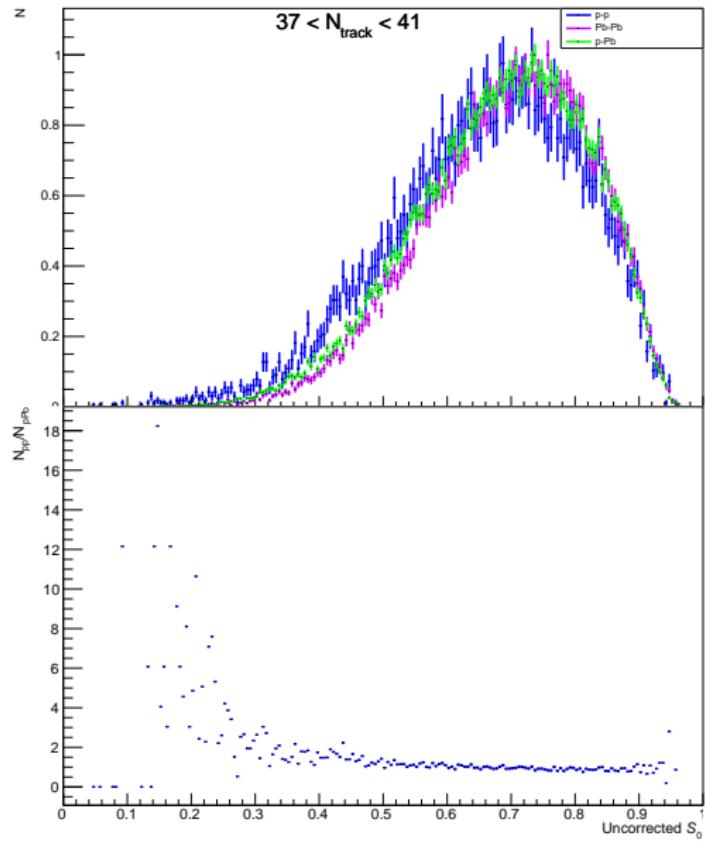
# Spherocity distributions and ratio of p-p and p-Pb for low multiplicity



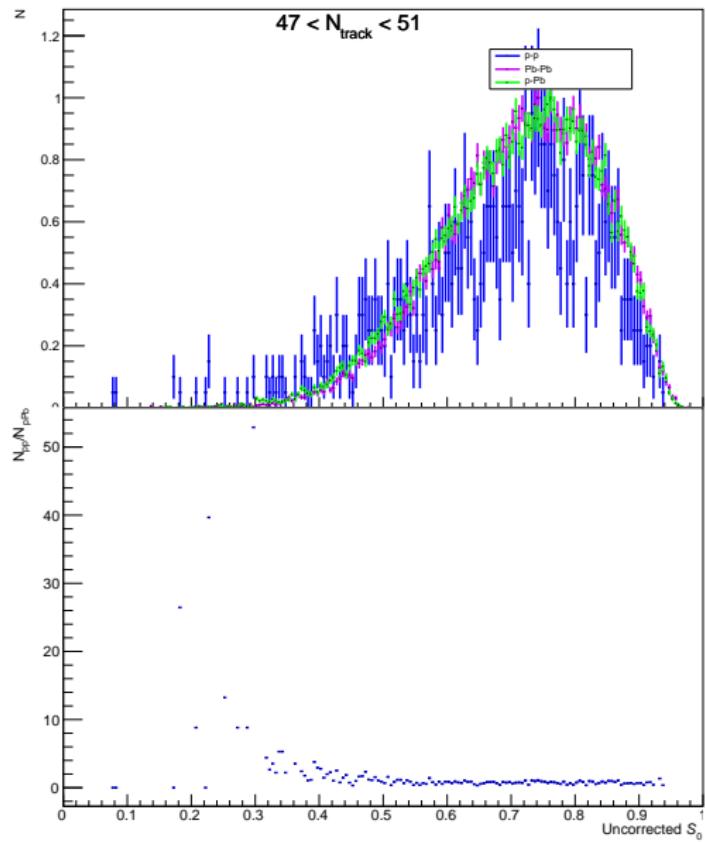
# Spherocity distributions and ratio of p-p and p-Pb for middle multiplicity



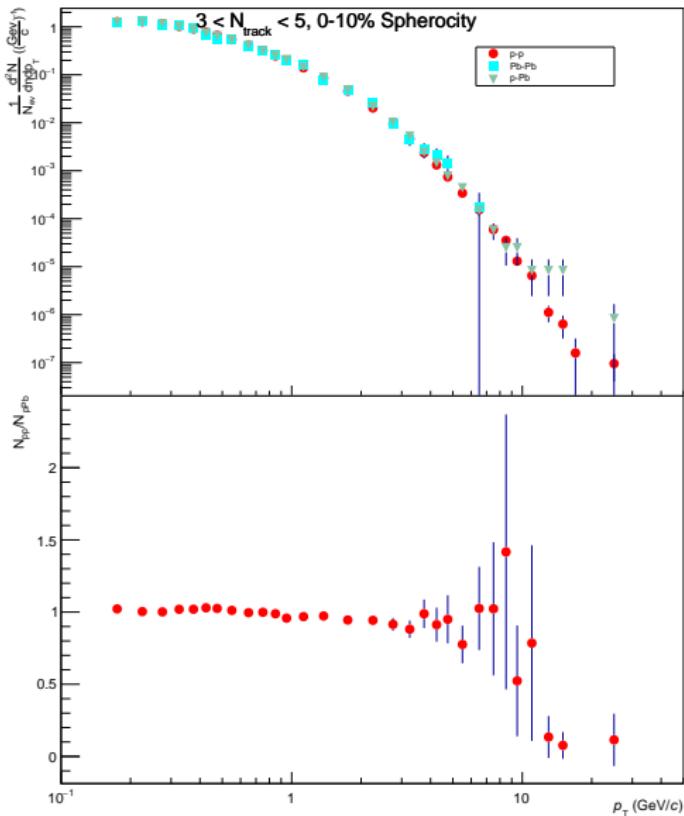
# Spherocity distributions and ratio of p-p and p-Pb for middle multiplicity



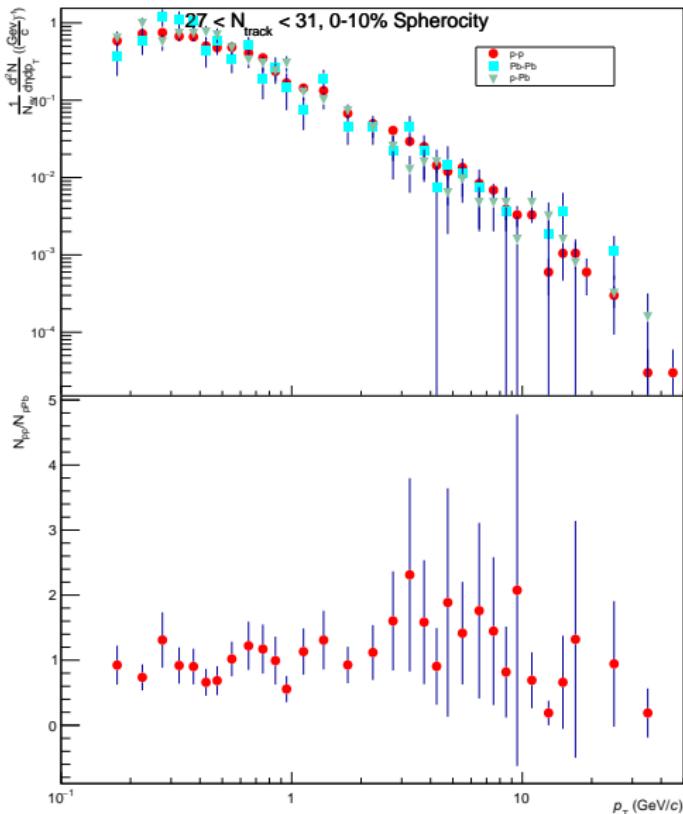
# Spherocity distributions and ratio of p-p and p-Pb for high multiplicity



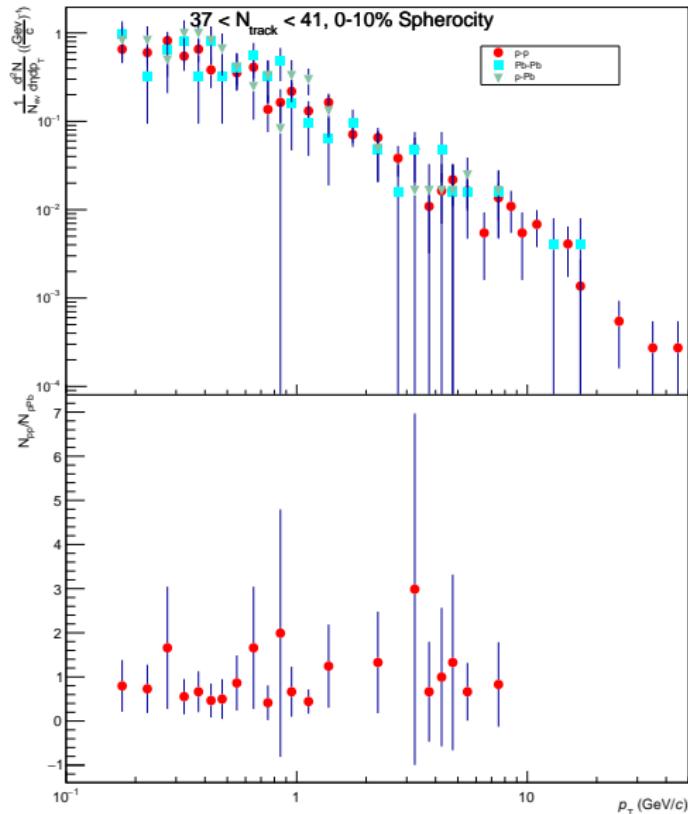
# Normalized $p_T$ distributions, jetty and low multiplicity



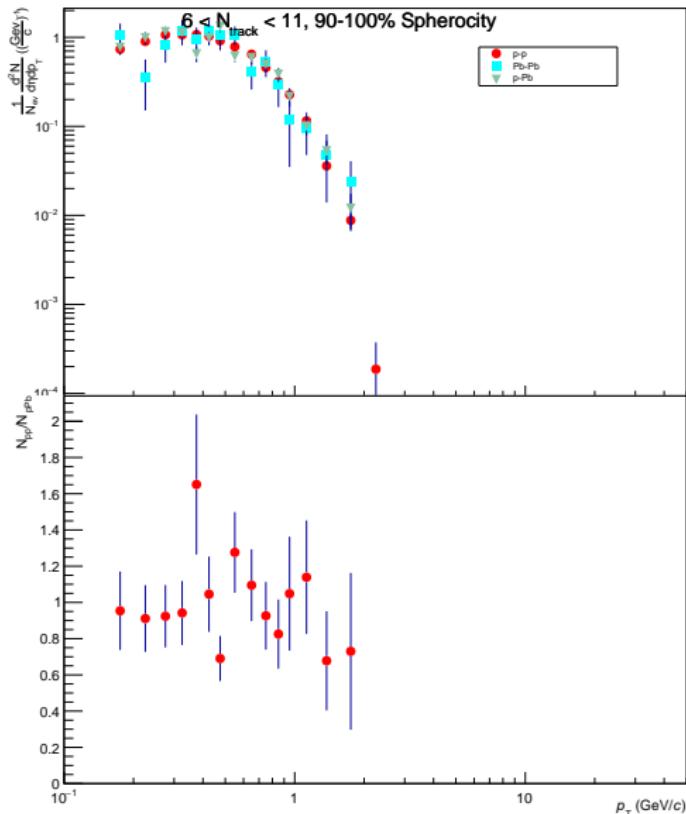
# Normalized $p_T$ distributions, jetty and middle multiplicity



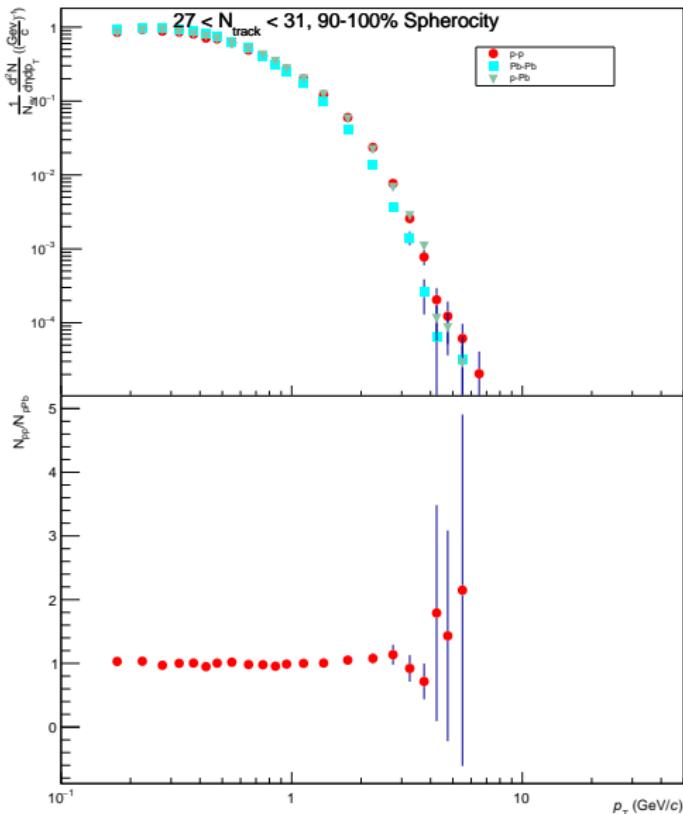
# Normalized $p_T$ distributions, jetty and high multiplicity



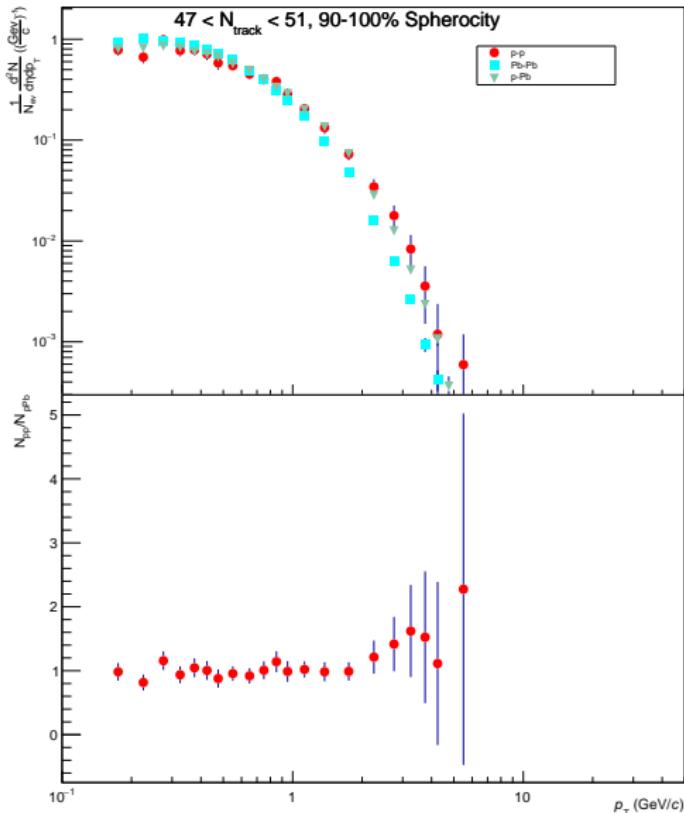
## Normalized $p_T$ distributions, isotropic and low multiplicity



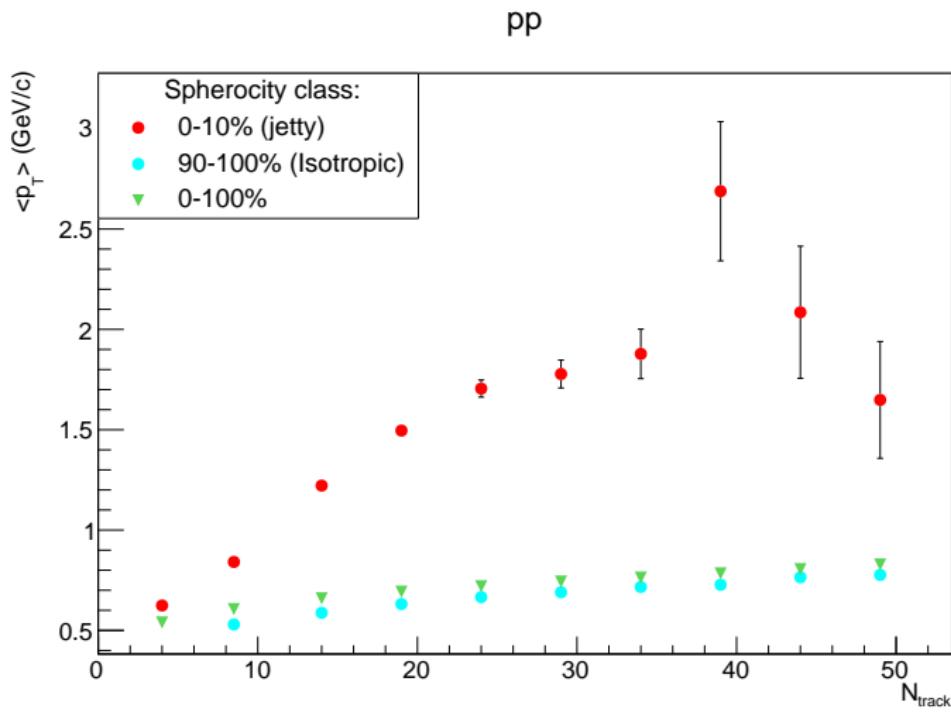
# Normalized $p_T$ distributions, isotropic and middle multiplicity



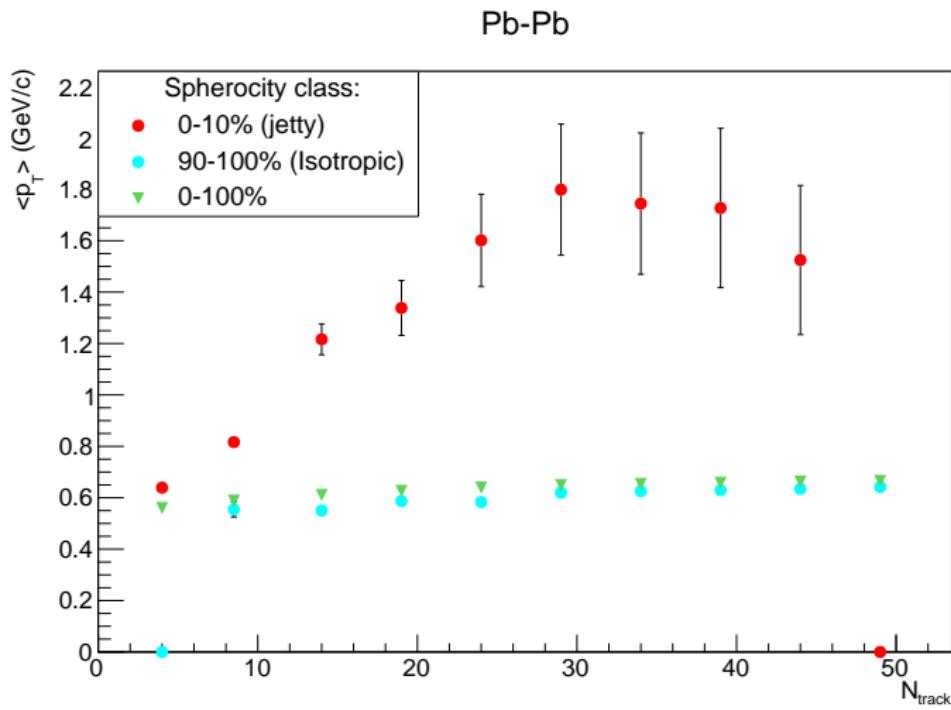
# Normalized $p_T$ distributions, isotropic and high multiplicity



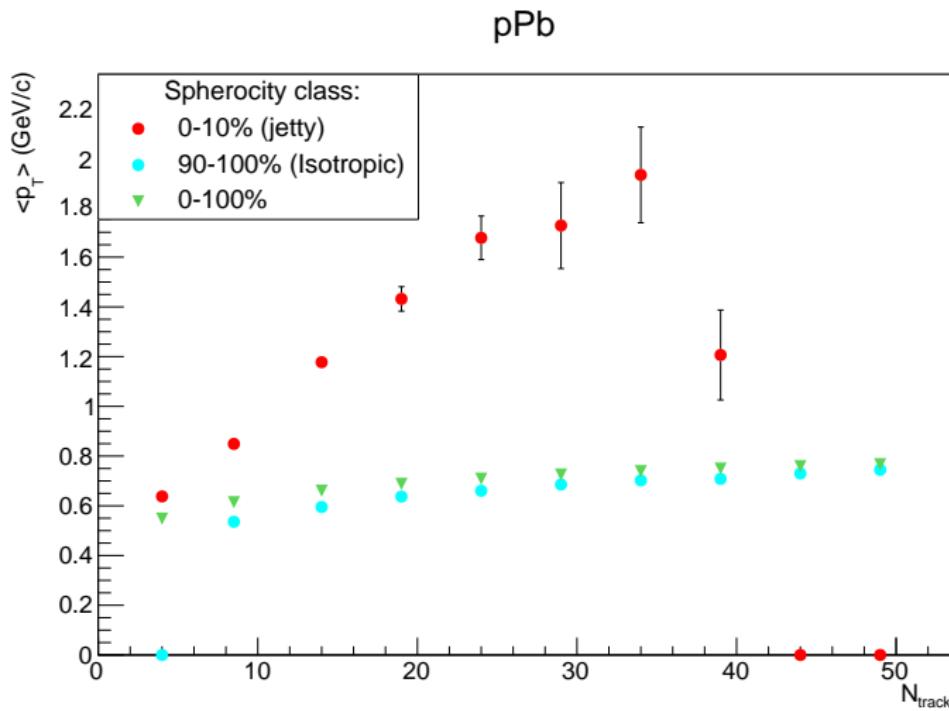
## Mean $p_T$ for pp collisions



## Mean $\langle p_T \rangle$ for Pb-Pb collisions



## Mean $p_T$ for p-Pb collisions



## Results. Unfinished work

- other pt cuts will be analyzed soon

Thank you for your attention!