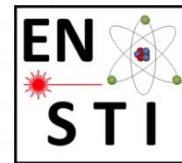


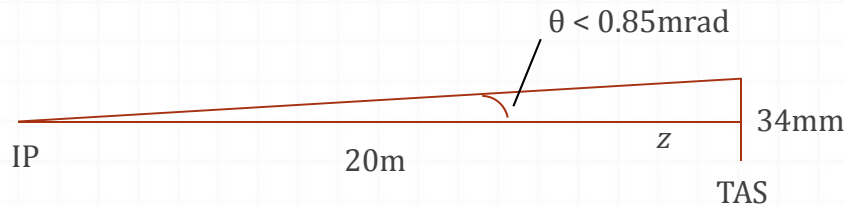
# FLUKA distributions of IP products

Francesco Cerutti



# Selected products

Aim: Provide the long range particles from the collision debris for (combined FLUKA-) tracking calculations



**Inelastic** head-on collisions at the IP

(beams aligned along the TAS axis (z), no divergence)

by the **DPMJET3** event generator  
integrated in FLUKA

$\delta(p/Z)/(p/Z)$  and  $\theta$  can already be given,

in principle no problem for further quantities, nor for embedding  
crossing angle, divergence, and spatial distribution

$$x' = \tan(\theta) \cos(\varphi)$$

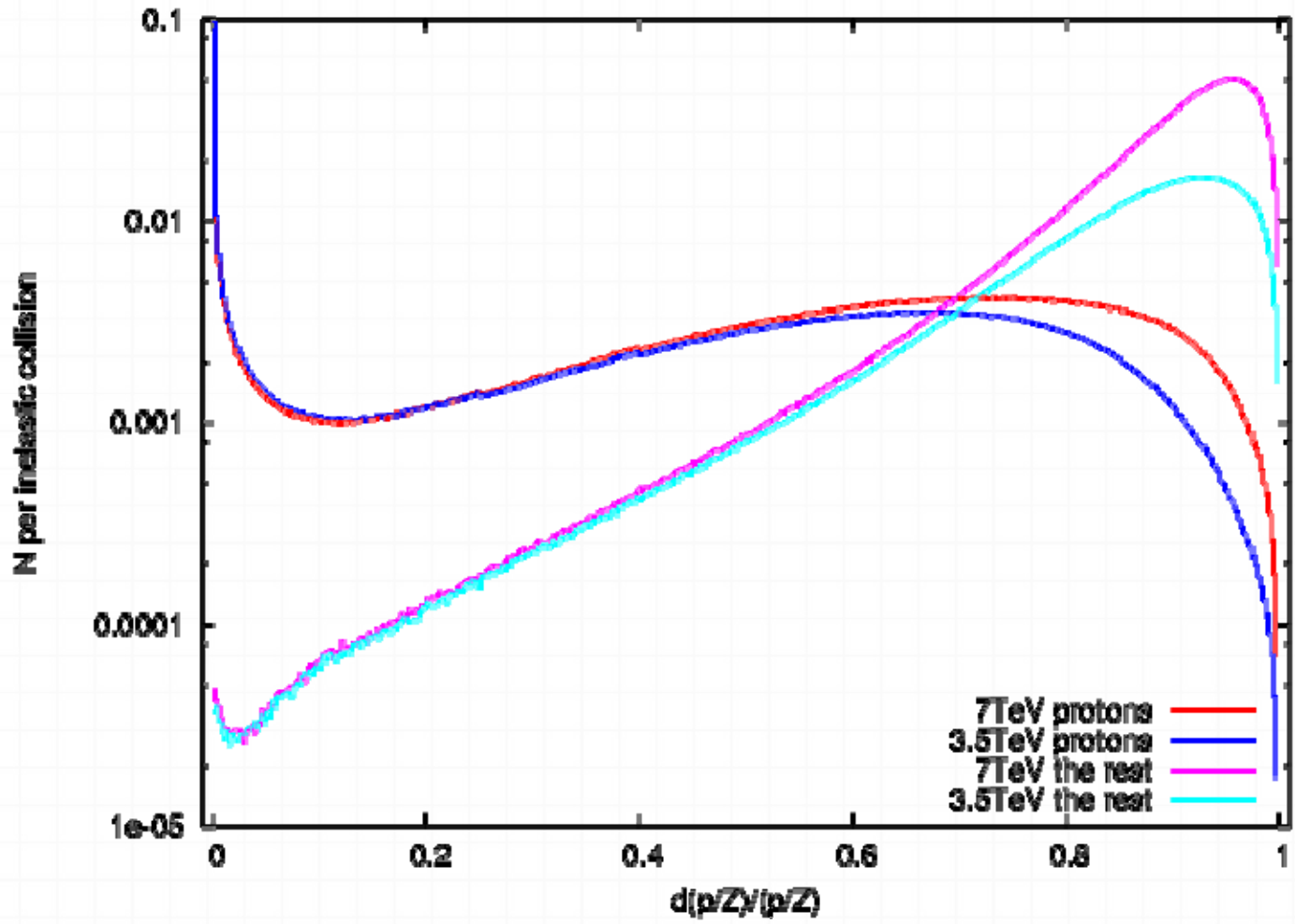
$$y' = \tan(\theta) \sin(\varphi)$$

$$\varphi = 2\pi\xi \quad \xi \text{ uniformly sampled over } (0,1]$$

[this does not apply in case of multiple particles  
from the same collision event (it happens for Pb+Pb)]

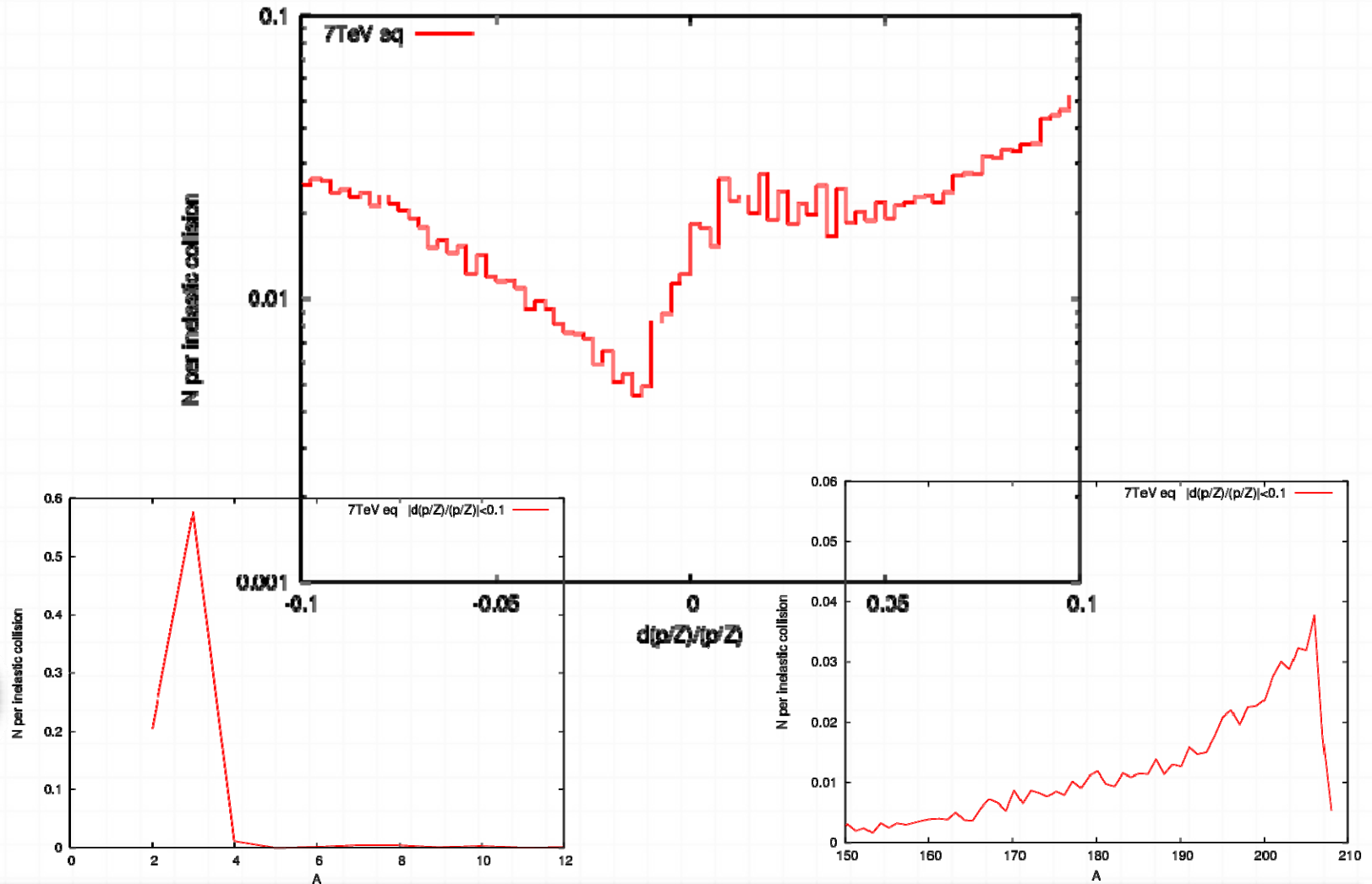
NB: Let's look also at the elastic contribution, not considered here

p-p

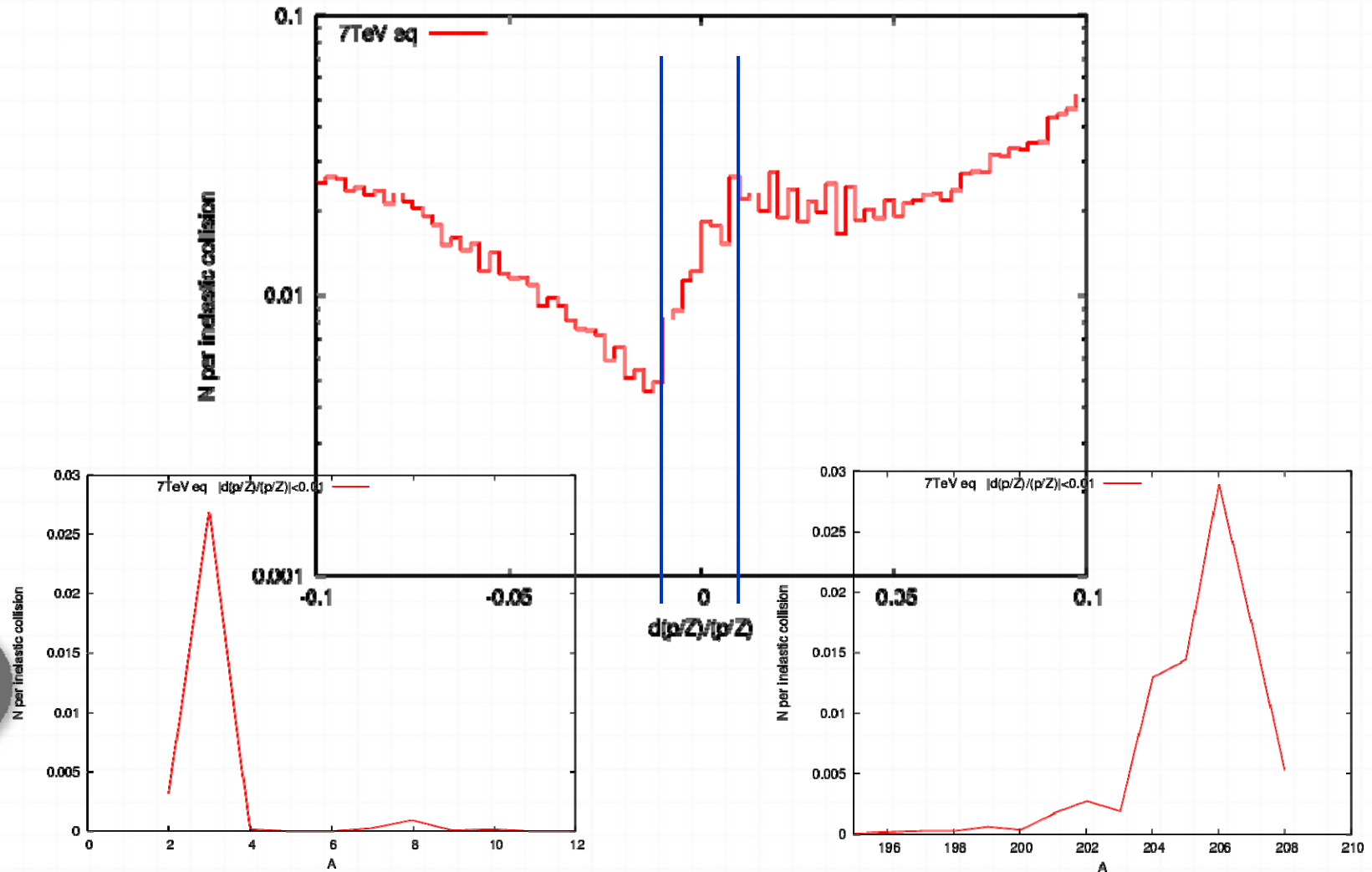


## Pb-Pb

WARNING: ridiculously low statistics (10k events vs 10M for p-p)

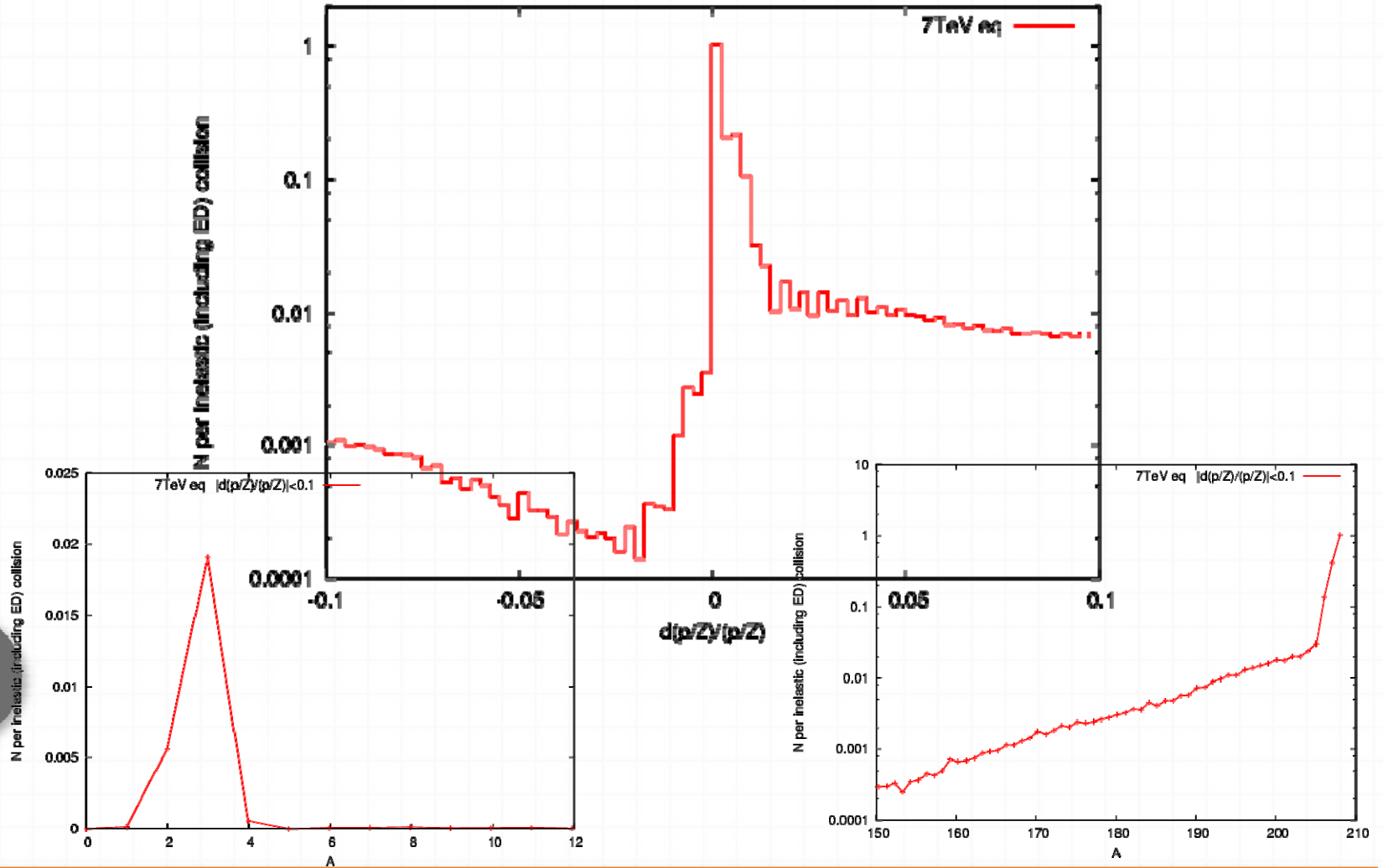


WARNING: ridiculously low statistics (10k events vs 10M for p-p)



# Pb-Pb [Addendum]

Putting together electromagnetic dissociation (450barn) and nuclear events (7.8barn, as in slides 4-5)



# Pb-Pb [Addendum]

Putting together electromagnetic dissociation (450barn) and nuclear events (7.8barn, as in slides 4-5)

