

# VHMPID L0 trigger Status report

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16/02/2010

Data sample:

[pp@10](#) TeV, MB, B=0.5 T

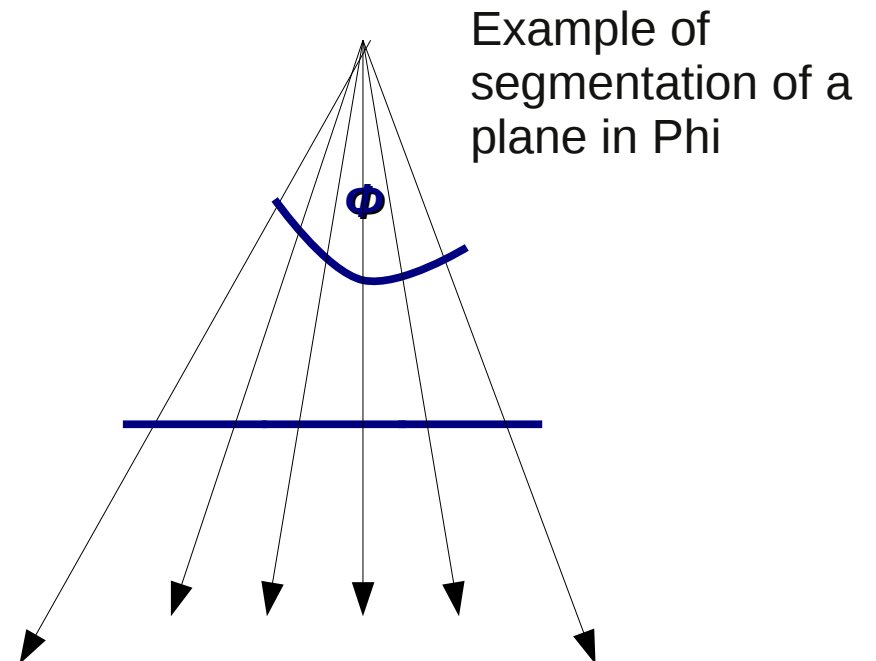
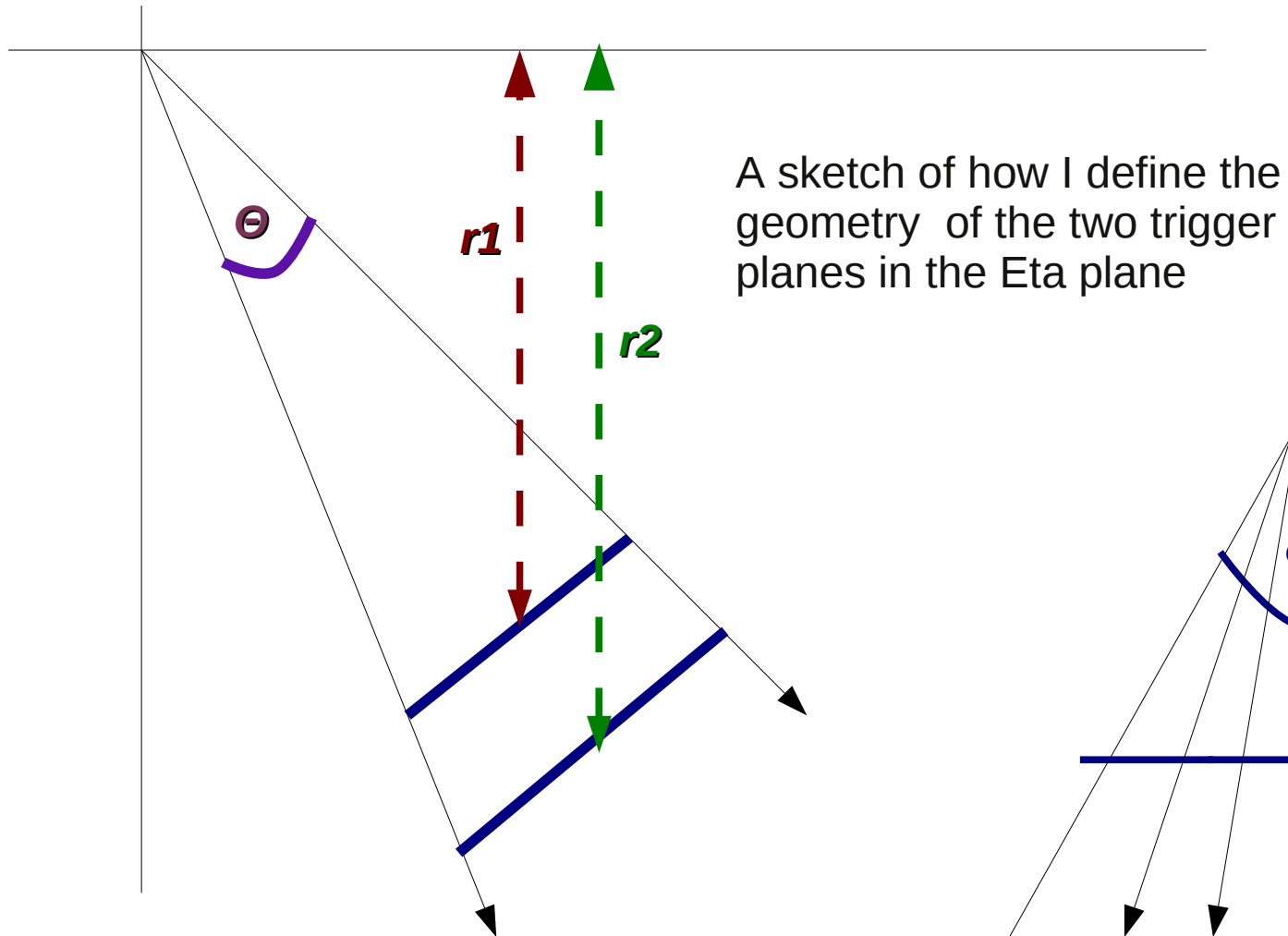
1,5 Mevents

# Geometry

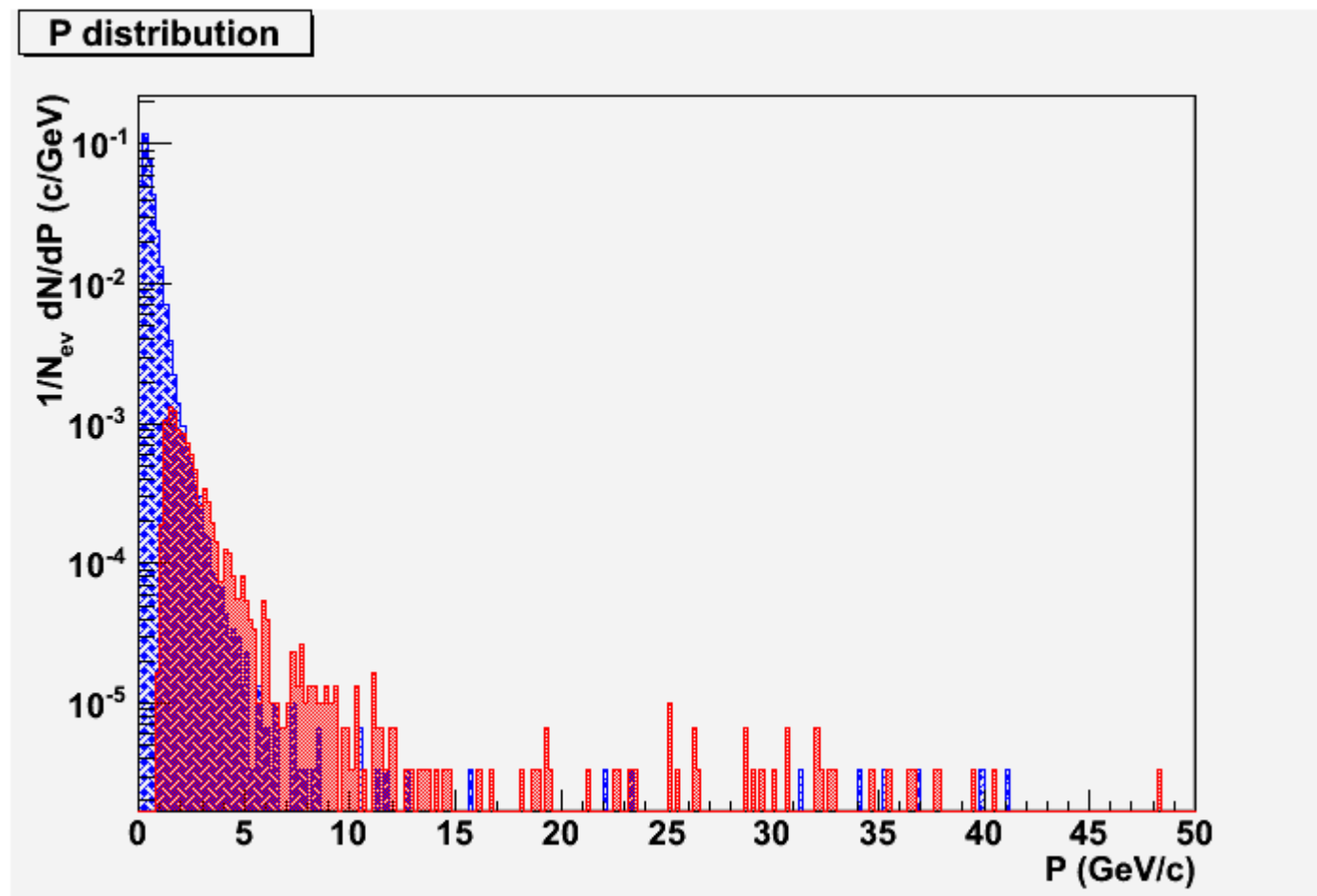
Acceptance:

$$\Theta \sim 22.5$$

$$\Phi \sim 20.$$



# 1 plane

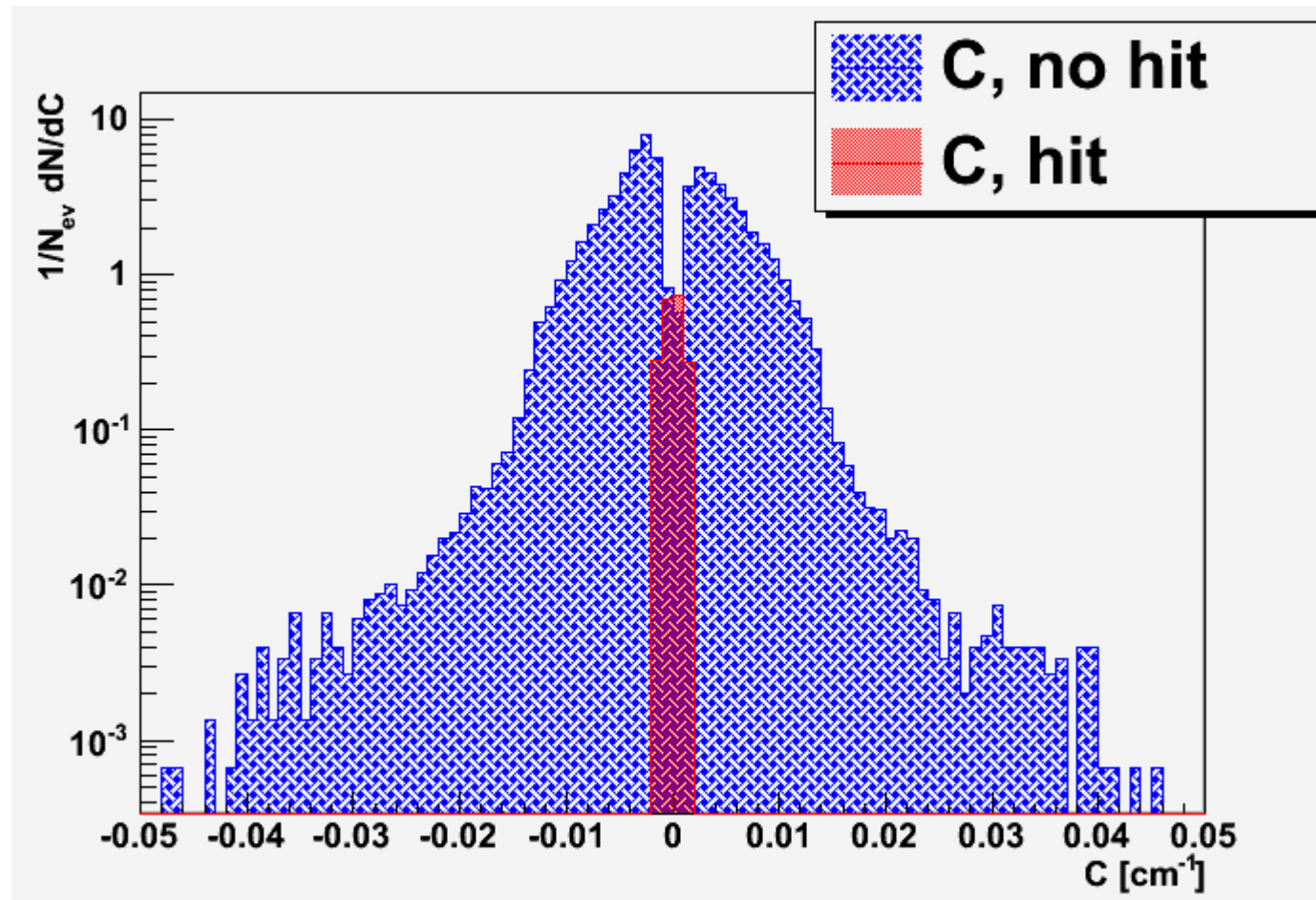


Momentum distribution of tracks inside the momentum acceptance, based on whether it is a “hit” or “no hit”.

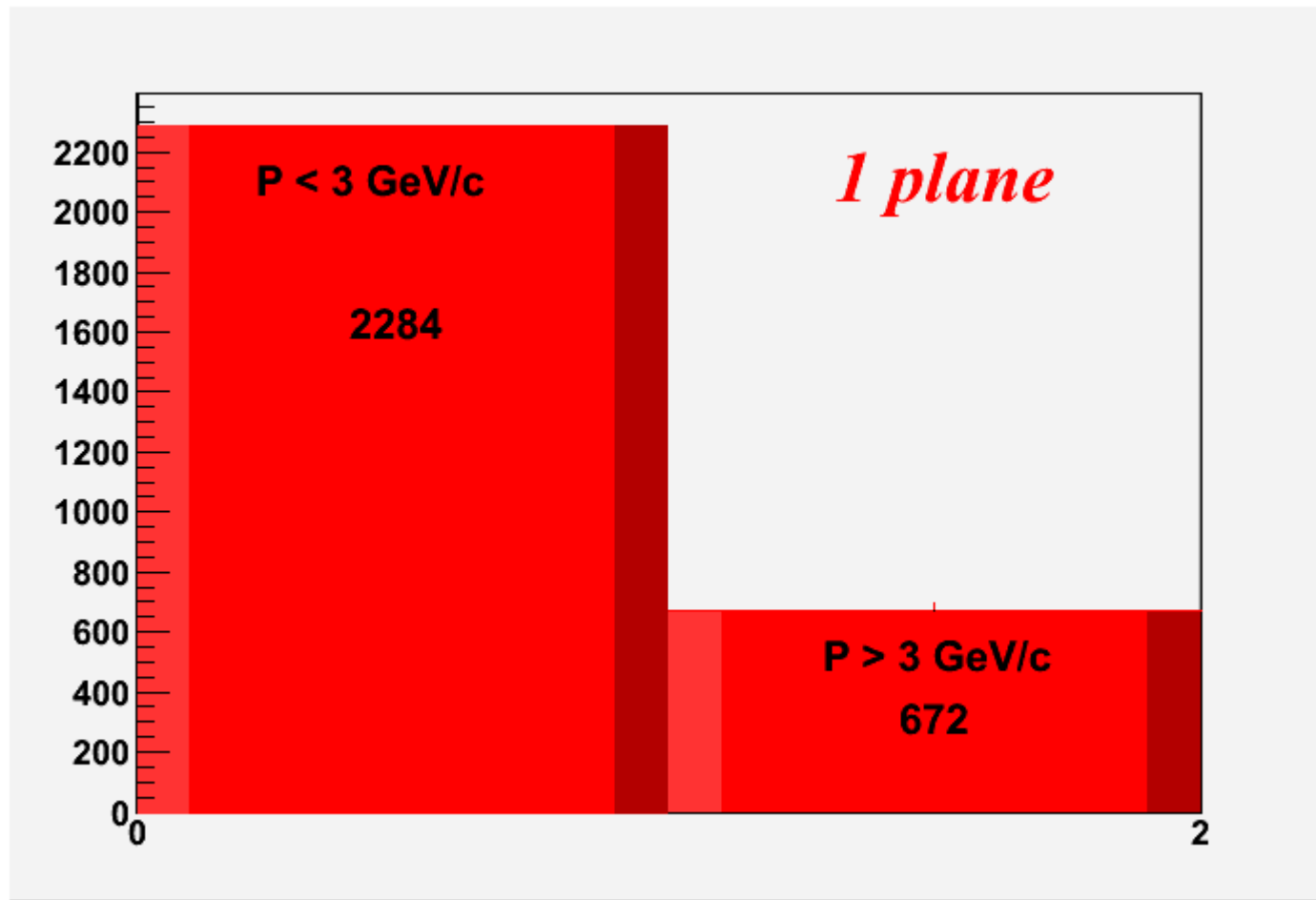
We see that the “hit” flag selects tracks with  $P > 1$  GeV/c

If a track hits the first plane, I flag it as a “hit” track, and if it does not leave the hit on the plane I flag it as a “no hit” track.  
I decided not to use  $p_T$ , since the signal flag is based on  $p$ .

# Curvature of tracks

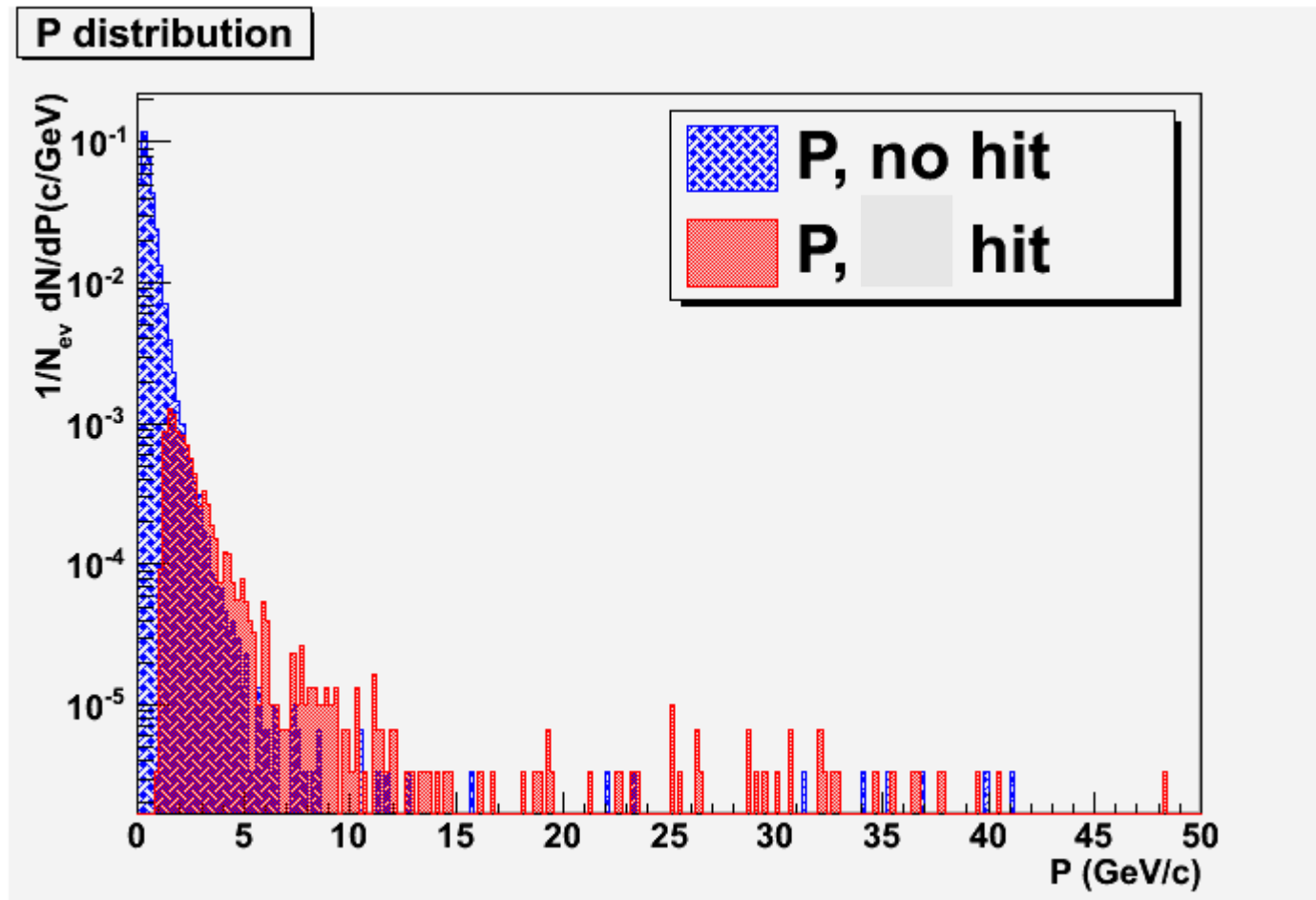


The curvature plot complements the momentum plot.



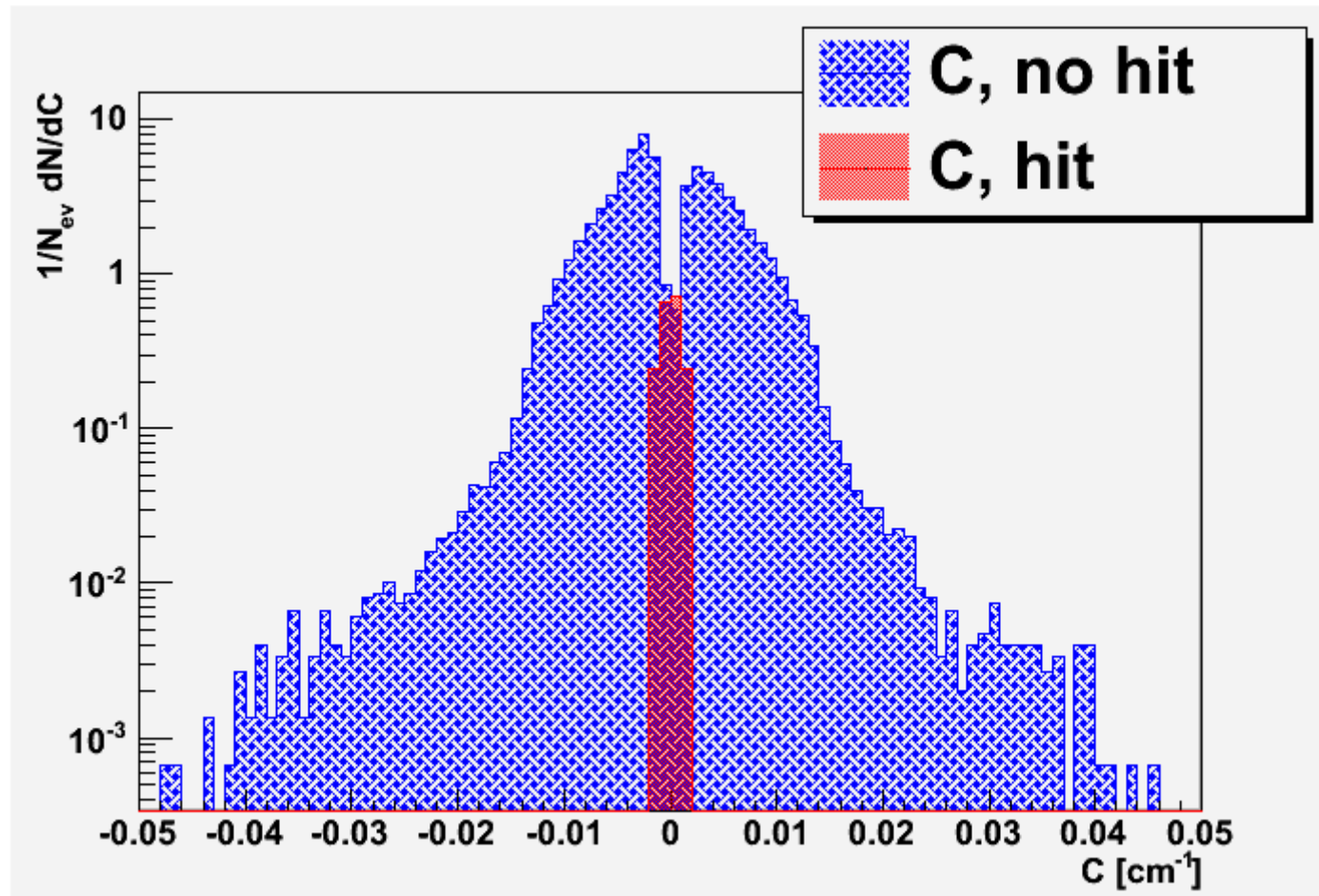
After putting geometry into the picture (although without effects of energy loss, detector effects, etc.), using a simple “hit” flag gives purity of 23%

# 2 planes

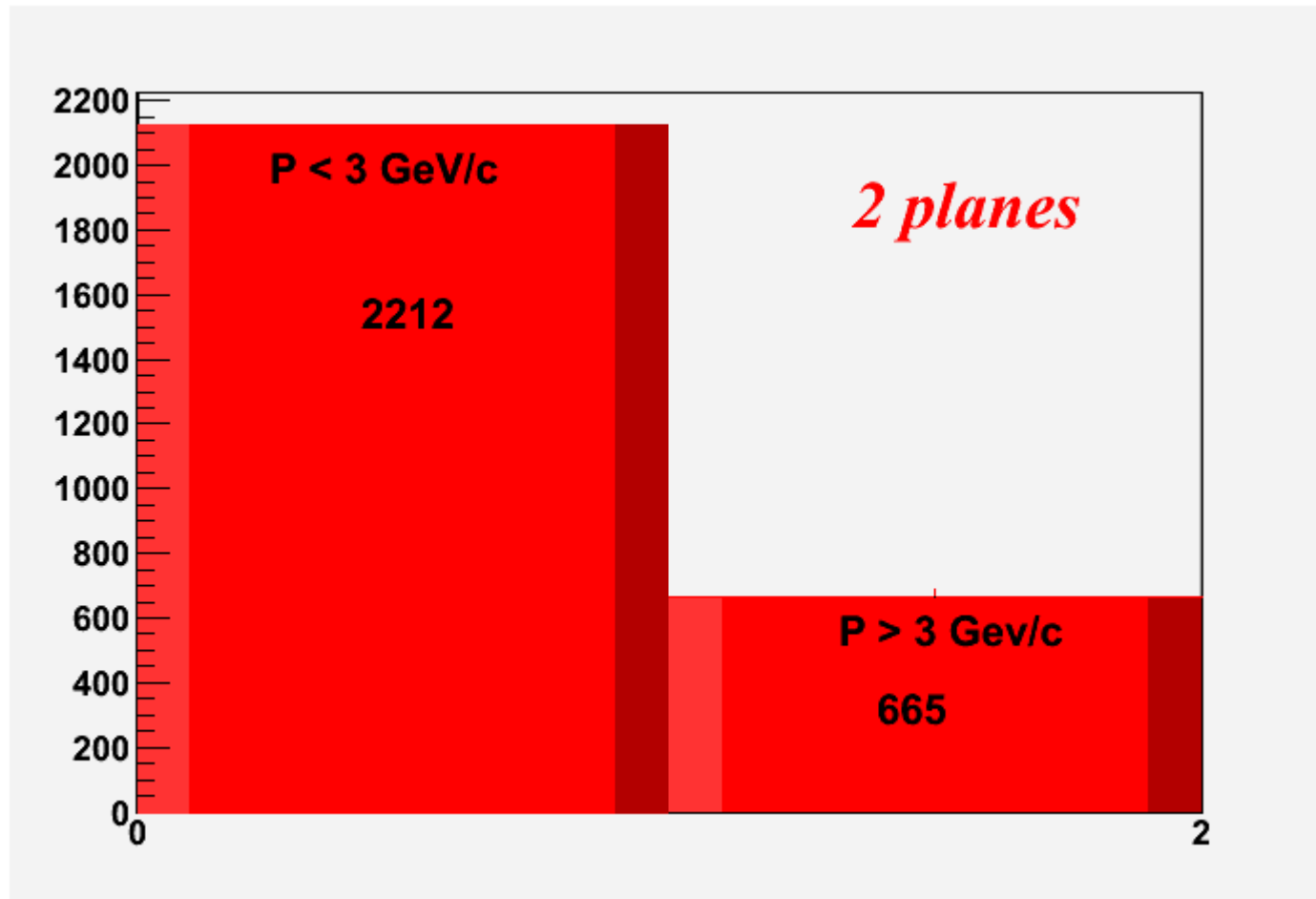


“hit” flag is given to a track that intersects both of the planes

# Curvature



# Purity



Purity: ~23%



# Summary

- Geometry introduction
  - L0; far from interaction point, low momentum tracks will not reach it
    - Distance – natural filter
    - Using only “hit” flag we achieved purity  $\sim 23\%$
    - Purity does not depend strongly on number of trigger planes