

the chamber taking into account physical processes as the diffusion. Assuming an average gain (about 5000) the cluster are then multiplied and the charge is gathered on the corresponding strip ($400\mu\text{m}$ size). Timing of the electronics is actually simulated only by including a gaussian spread on arrival time fixed at about 10ns. For each strip the time of the first cluster is recorded and stored for that strip together with the collected charge. From all the recorded time and the strip position a straight fit is built Fig. 2 and the angle of the track is extracted and compared with the simulated track.

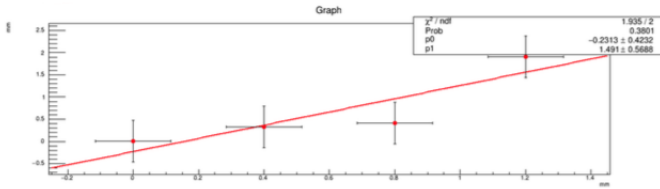


Figure 2. example of a reconstructed track in microTPC mode

in 3, 4 and 5 are shown the distribution of the reconstructed angles for angles ranging from 10° to 40° for this simple simulation. As can be seen the reconstructed angle is always larger than the real one, this because the use of the first hit arrived in time, and this reproduces the real effect even being this a simple simulation.

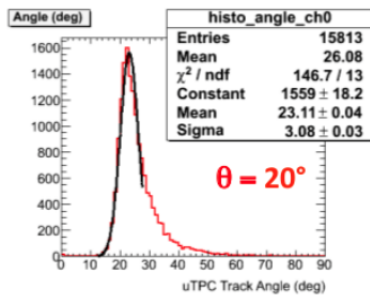


Figure 3. reconstructed microTPC angles

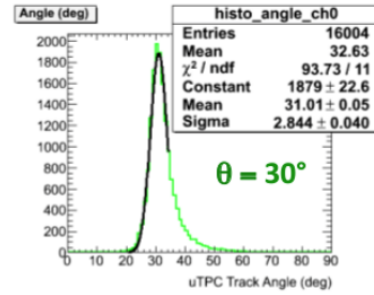


Figure 4. reconstructed microTPC angles

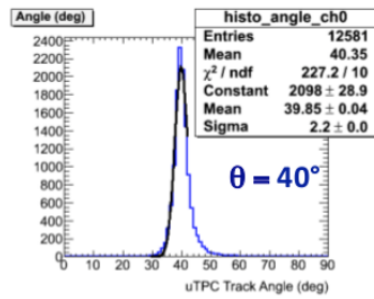


Figure 5. reconstructed microTPC angles

- ATLAS Collaboration, CERN-LHCC-2013-006, ATLAS-TDR-20-2013, June 2013.

REFERENCES

- ATLAS Collaboration, JINST 3 S08003 (2008) 1-107.