

Drift Chamber Occupancy Studies Using Bhwide Bhabha Monte Carlo Generator

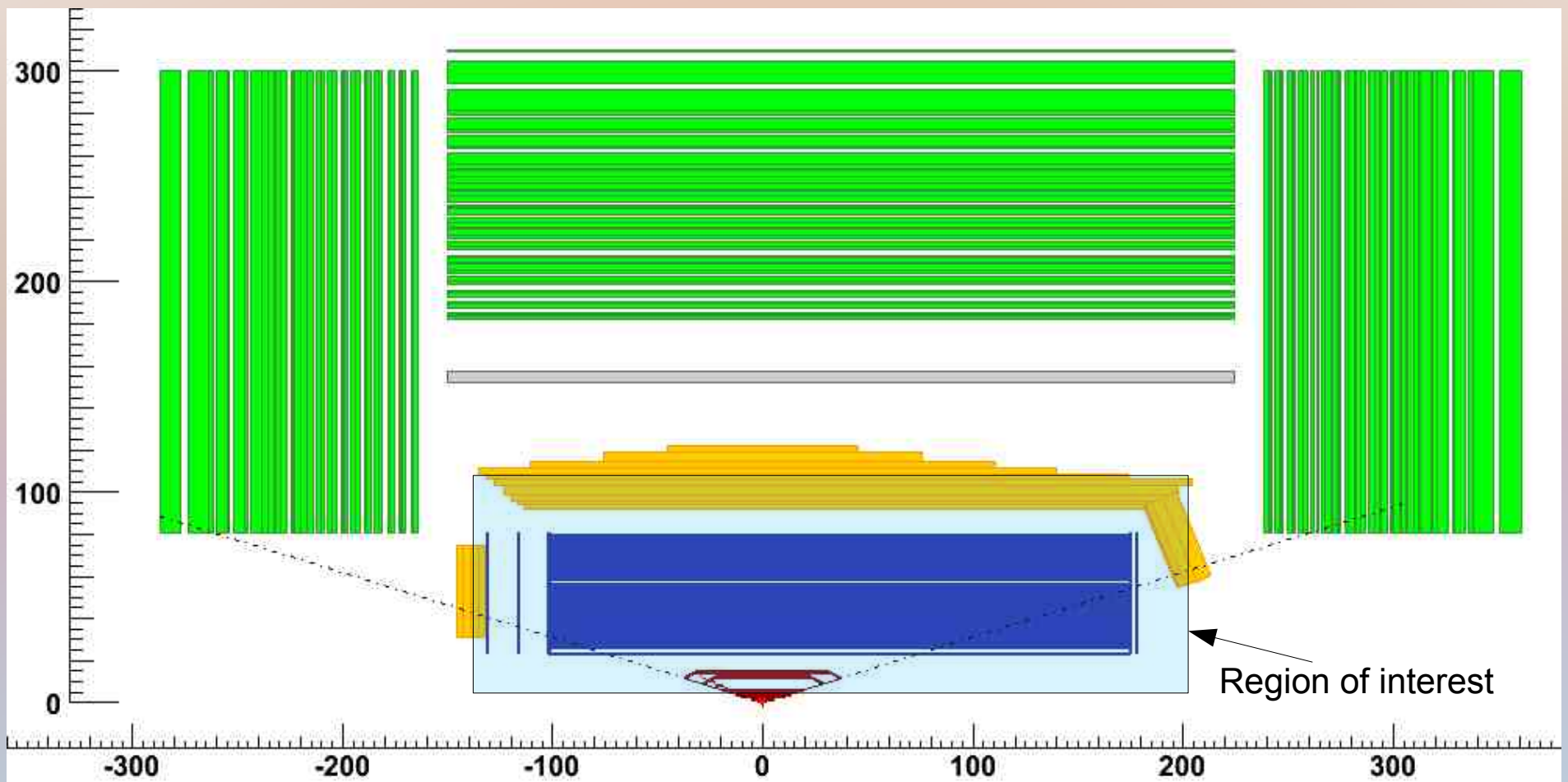
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McGill University

Developments

- Have updated to FastSim V0.2.0
- Switched from PacUser package to PacQA package for obtaining direct gHit info
- Performed PacQA analyses for all geometries included with FastSim installation (except baseline_11SL which I couldn't get to work)

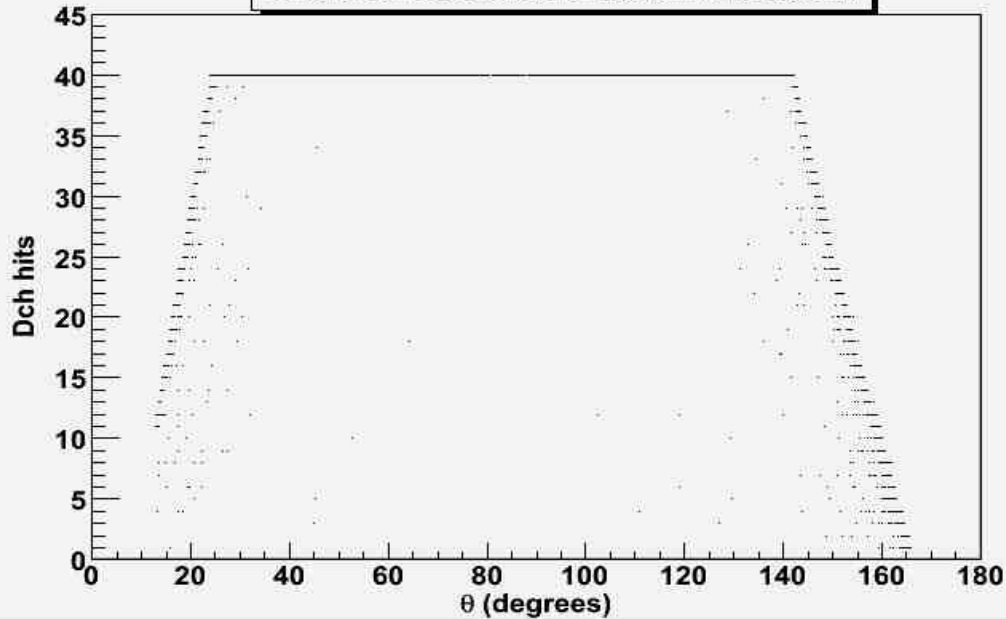
Baseline Geometry

- Visualization Code Supplied by Matteo Rama
- Dch baseline: $-101.5\text{cm} \leq z \leq 174.9\text{cm}$



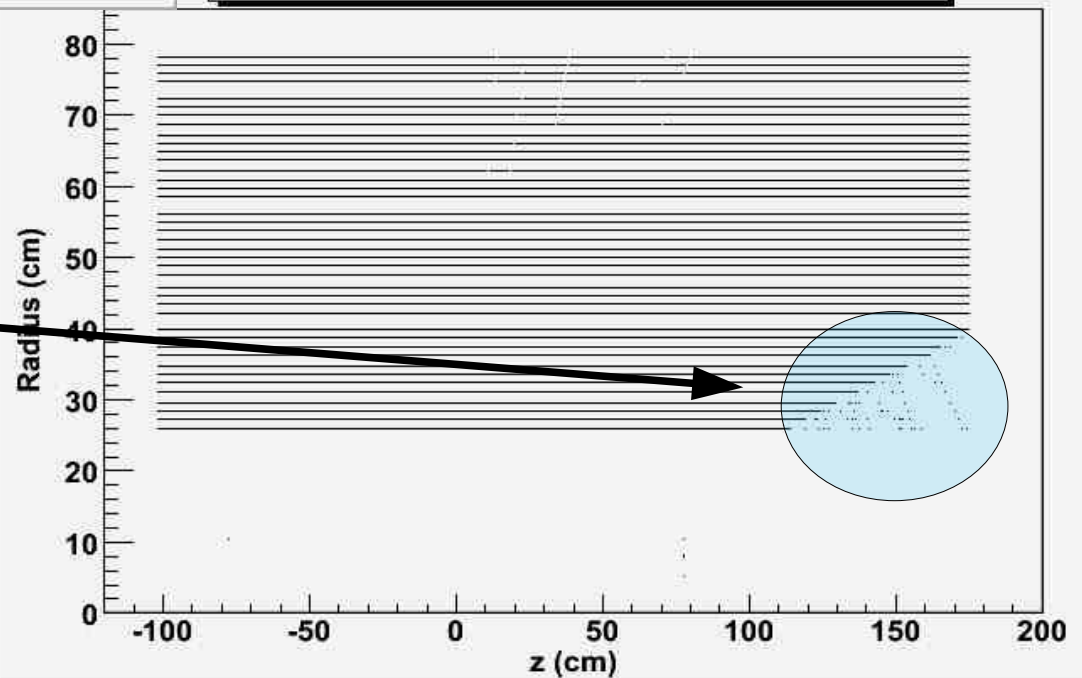
Baseline Geometry: Dch Performance

Number of Dch hits as a function of angle (primary particles only)

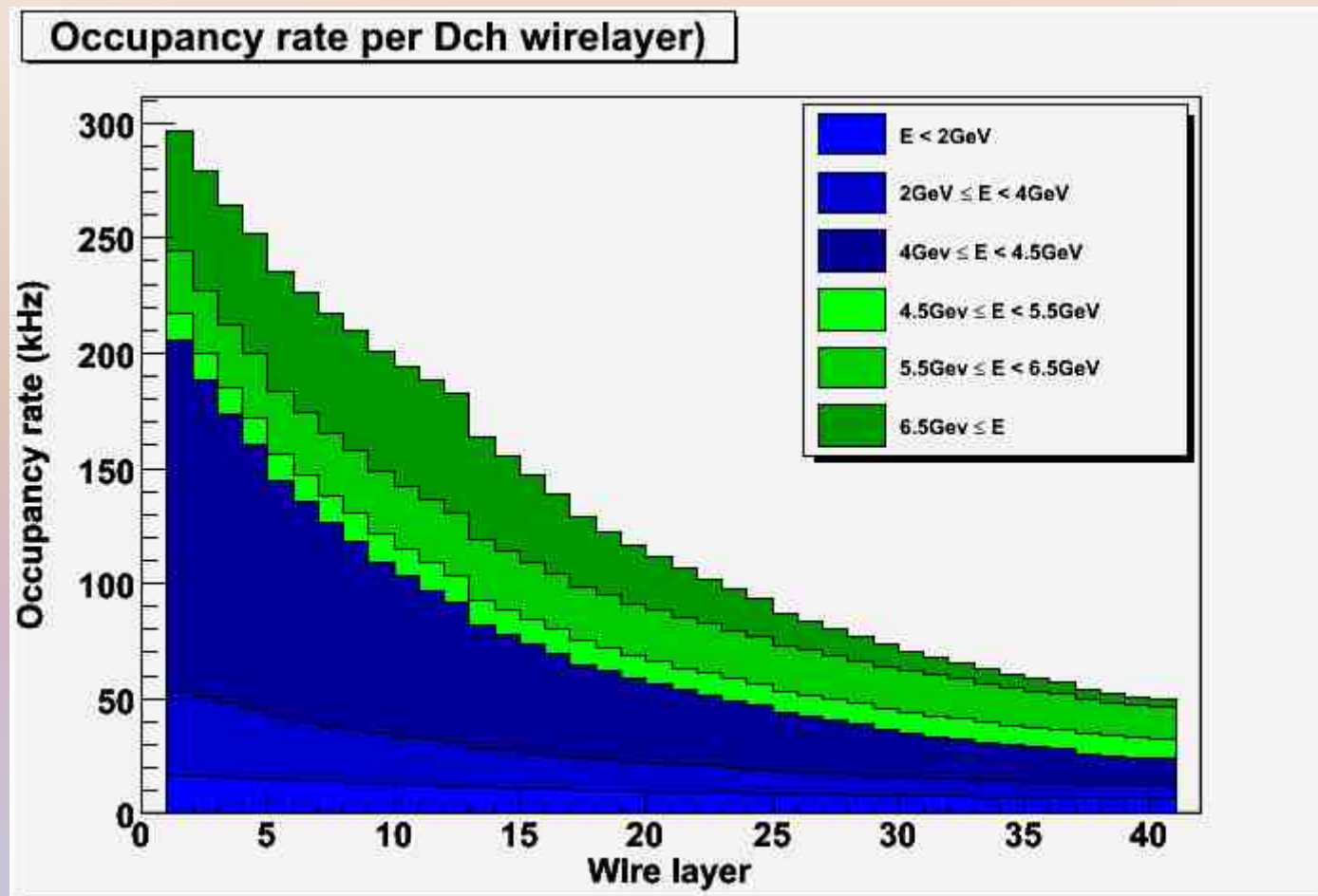


This clipping is actually seen on both sides of the drift chamber in geometries such as Longbwd. Could it be caused by SVT?

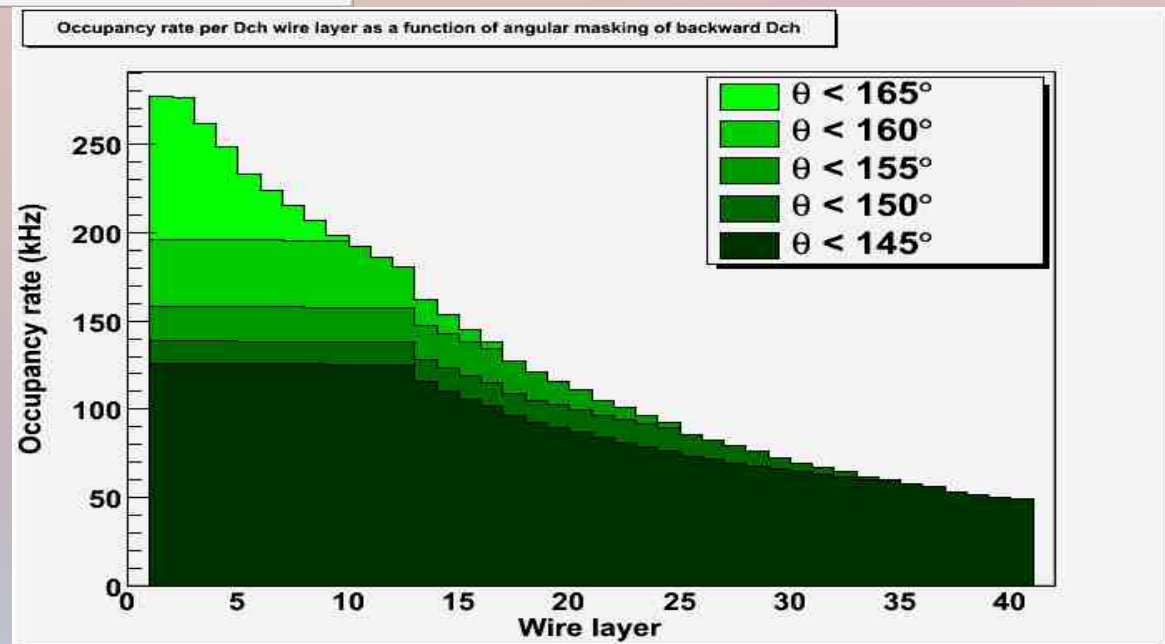
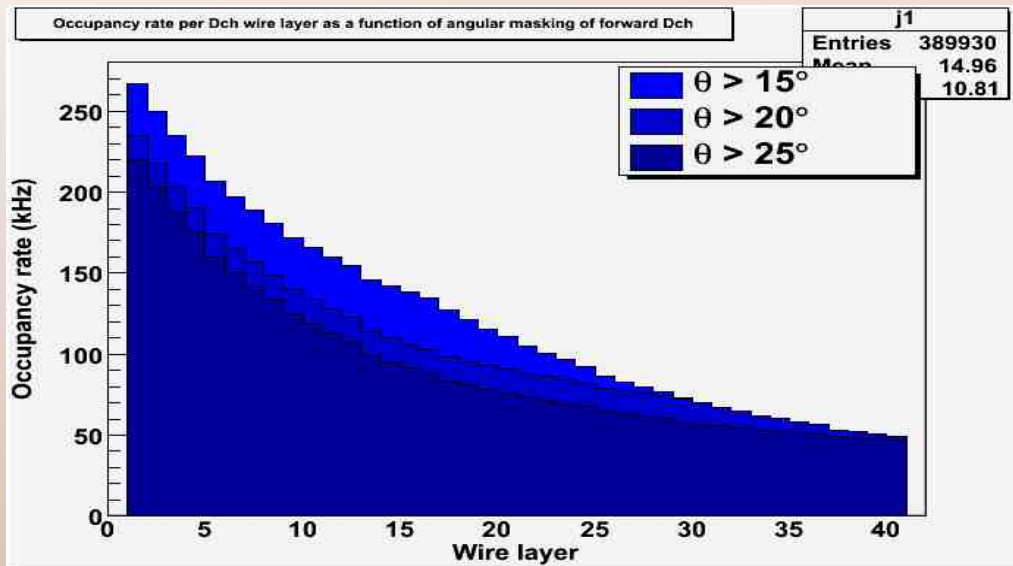
Dch hits in the radial z plane



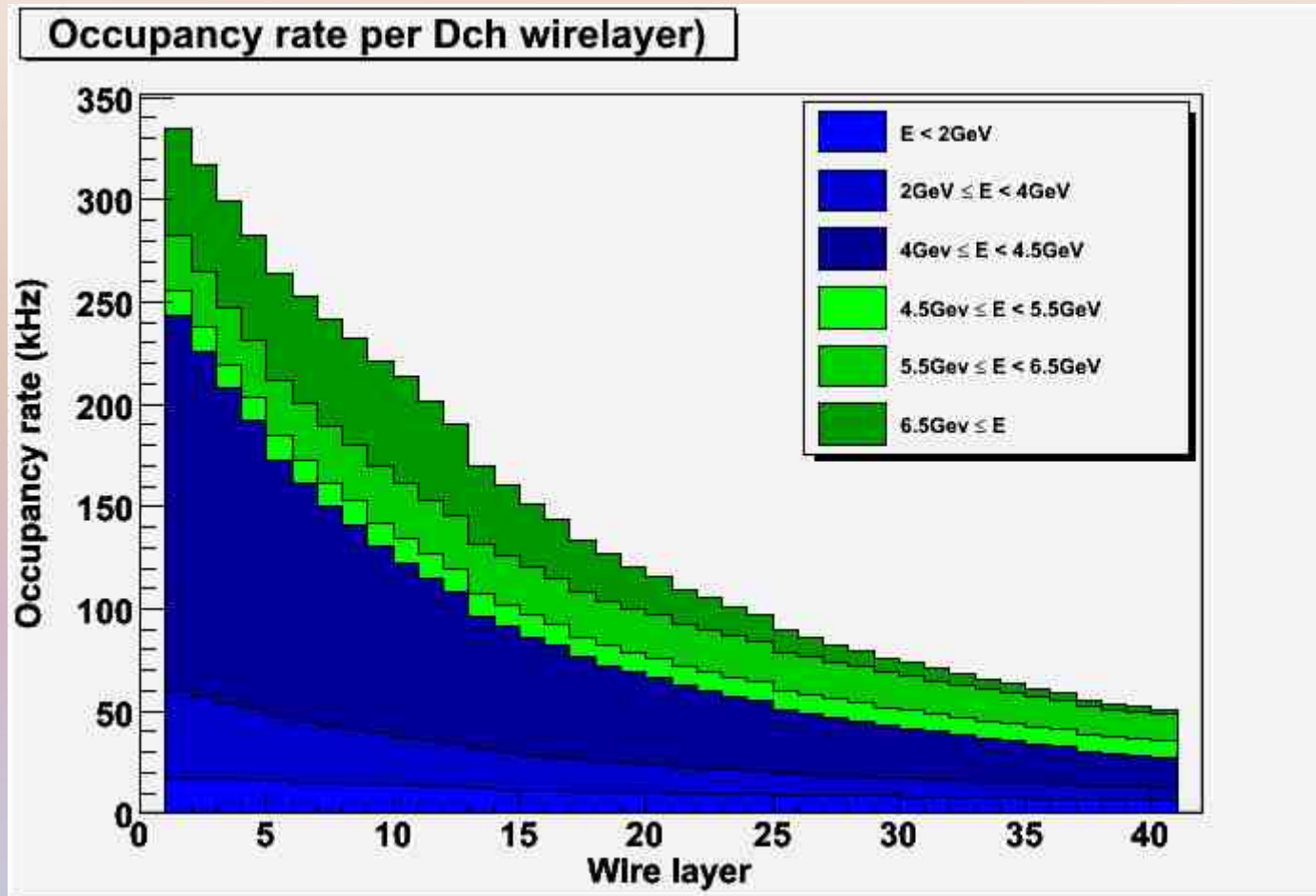
Baseline Geometry: Occupancy Rates



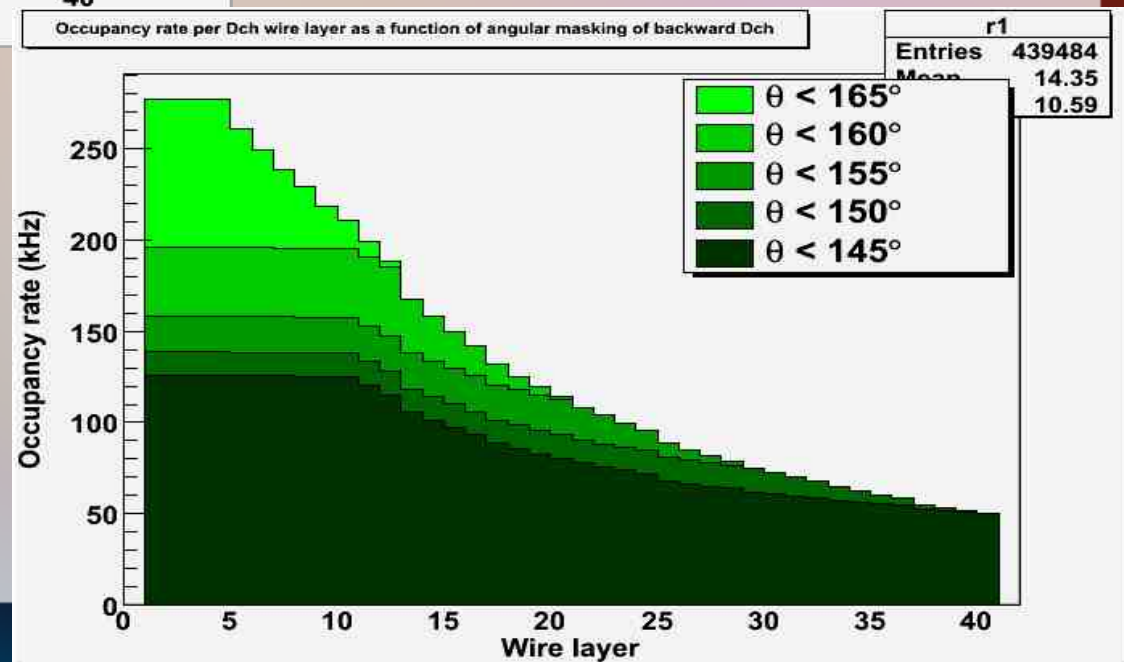
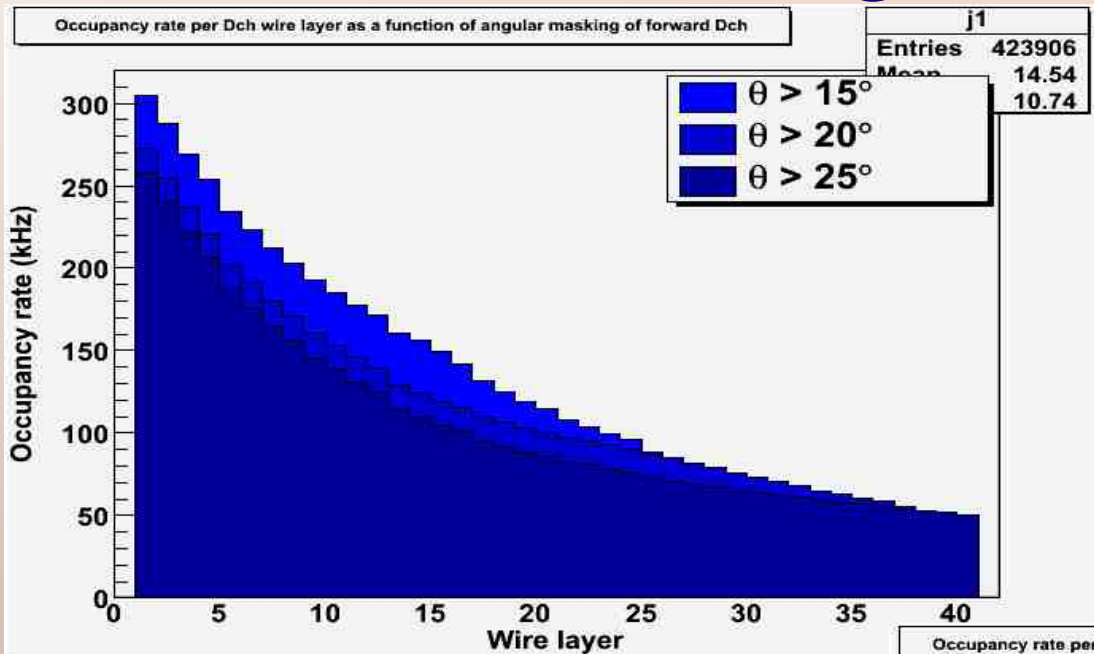
Baseline Geometry: Angular Cuts



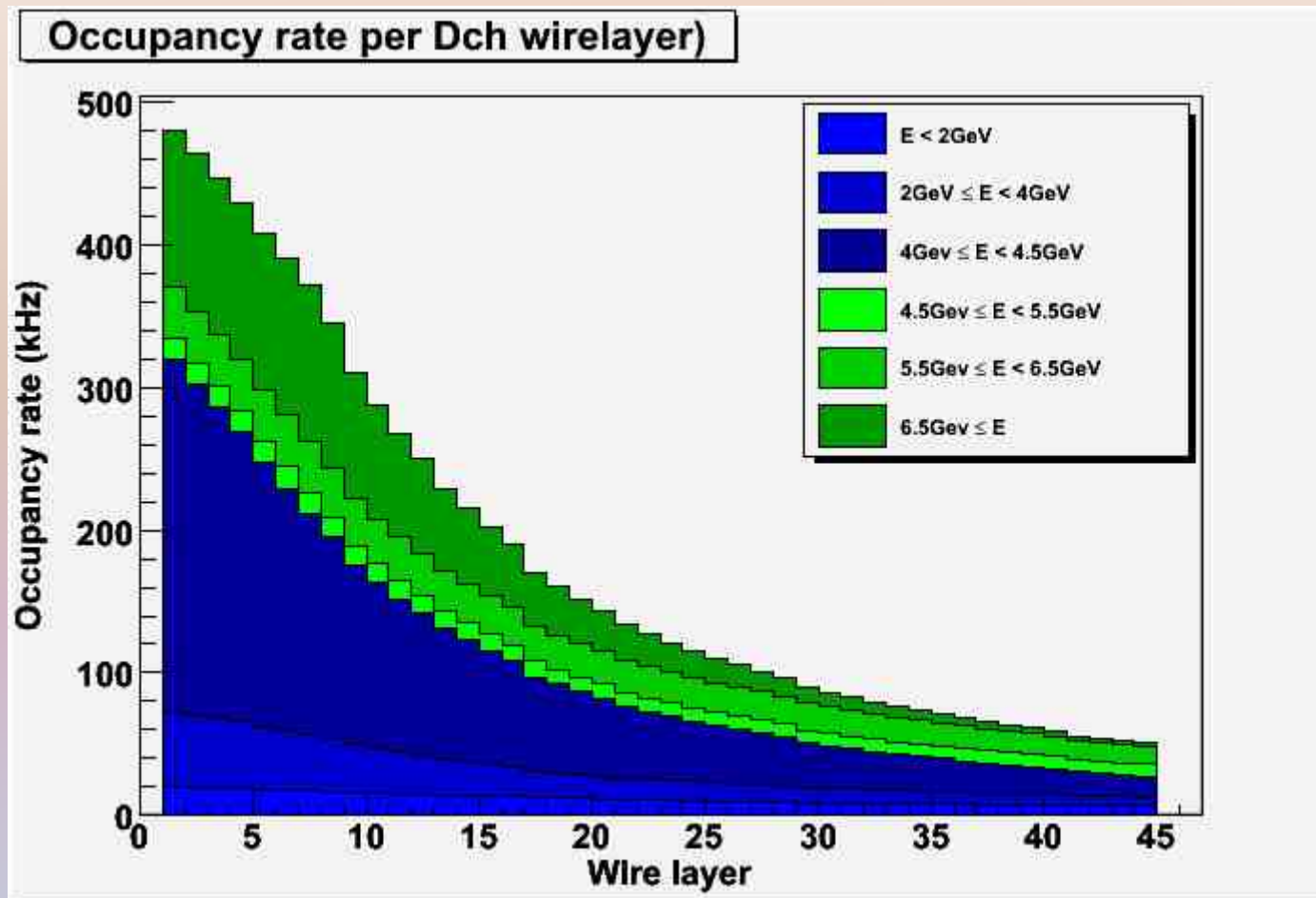
Baseline_+10IP Geometry: Occupancy Rates



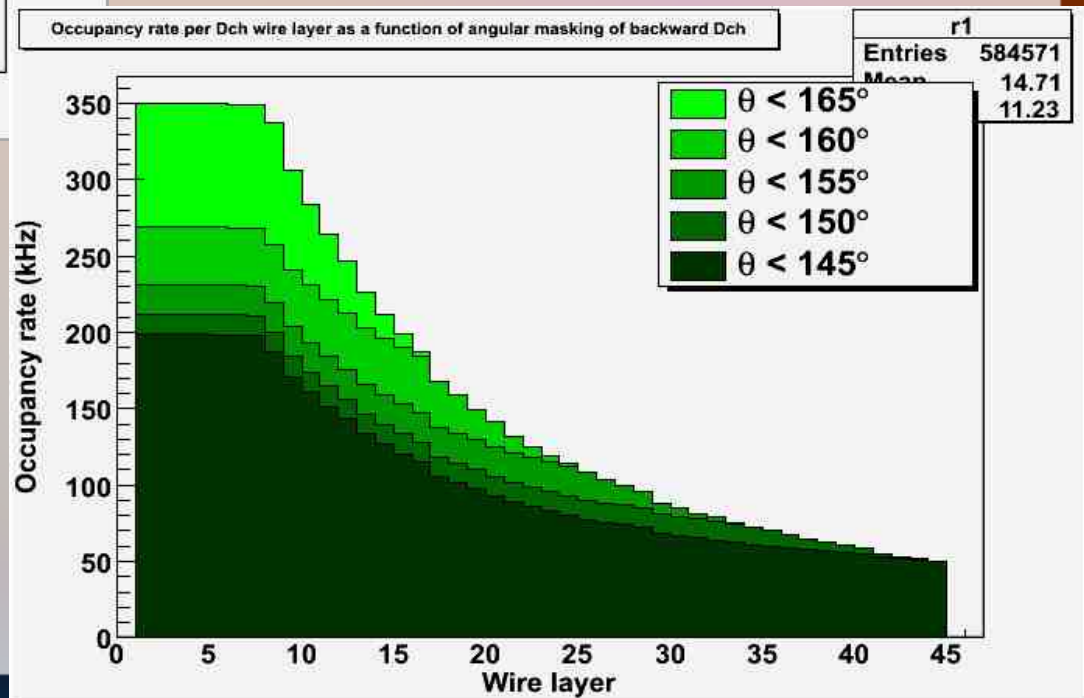
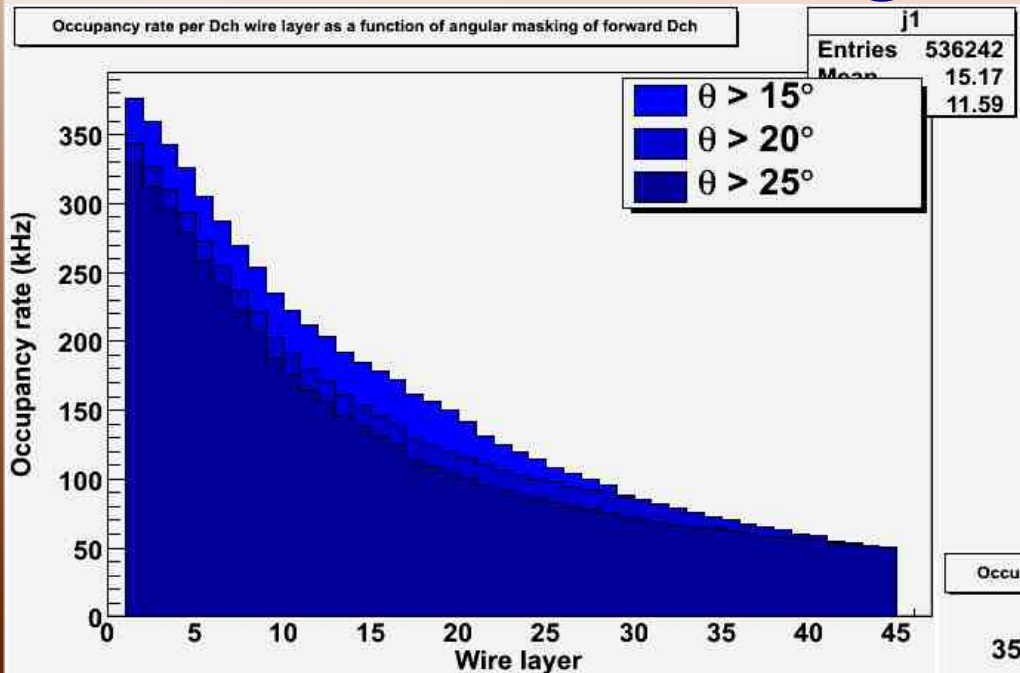
Baseline_+10IP Geometry: Angular Cuts



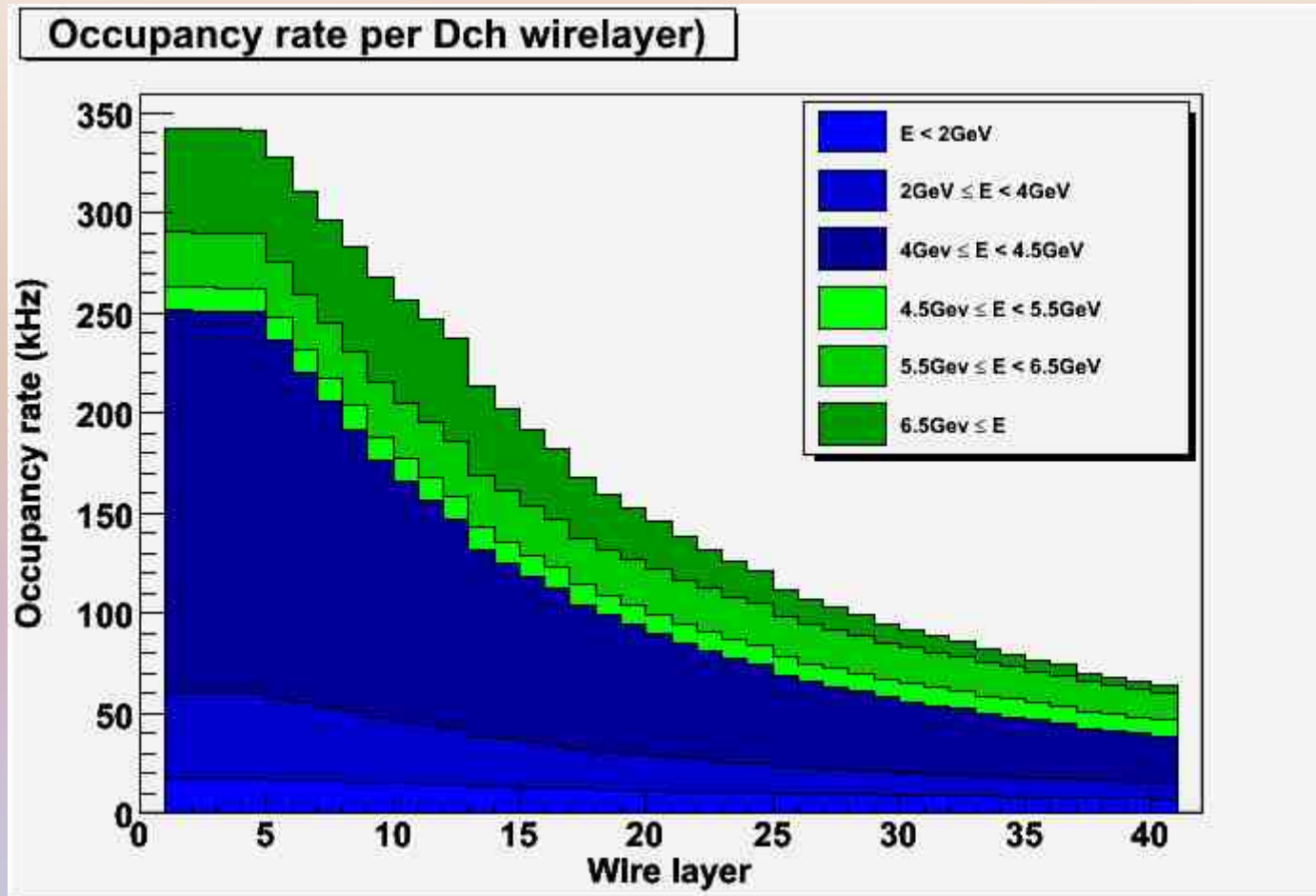
Baseline_+10IP_11SL Geometry: Occupancy Rates



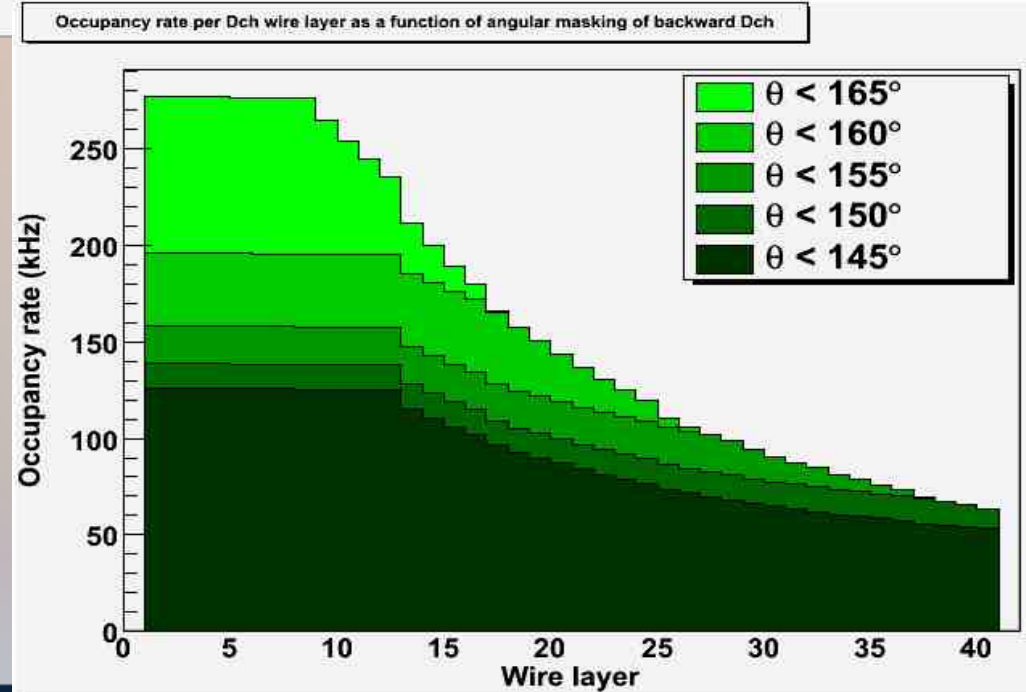
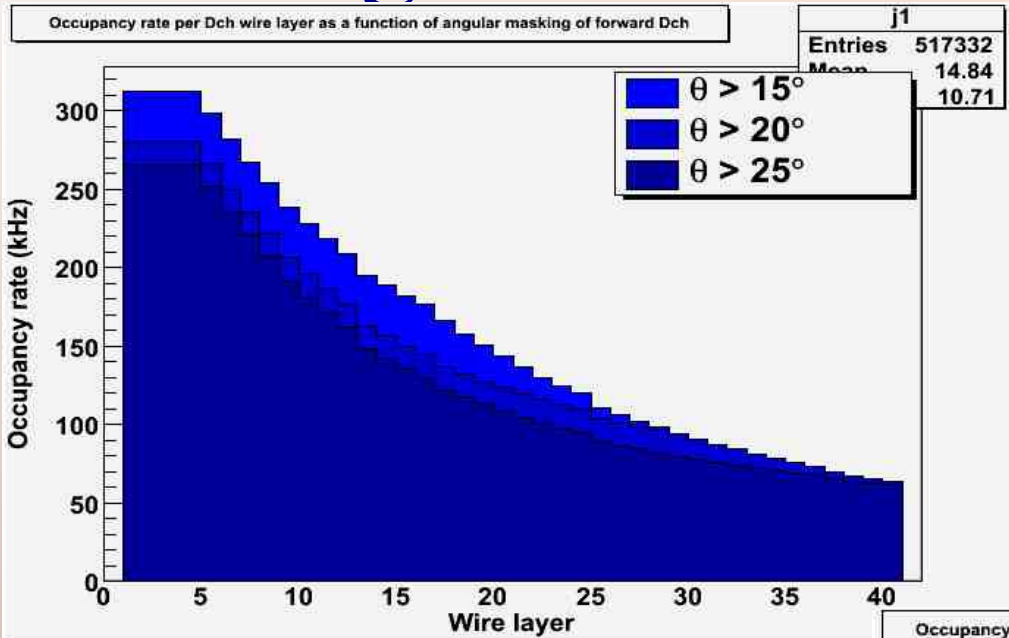
Baseline_+10IP_11SL Geometry: Angular Cuts



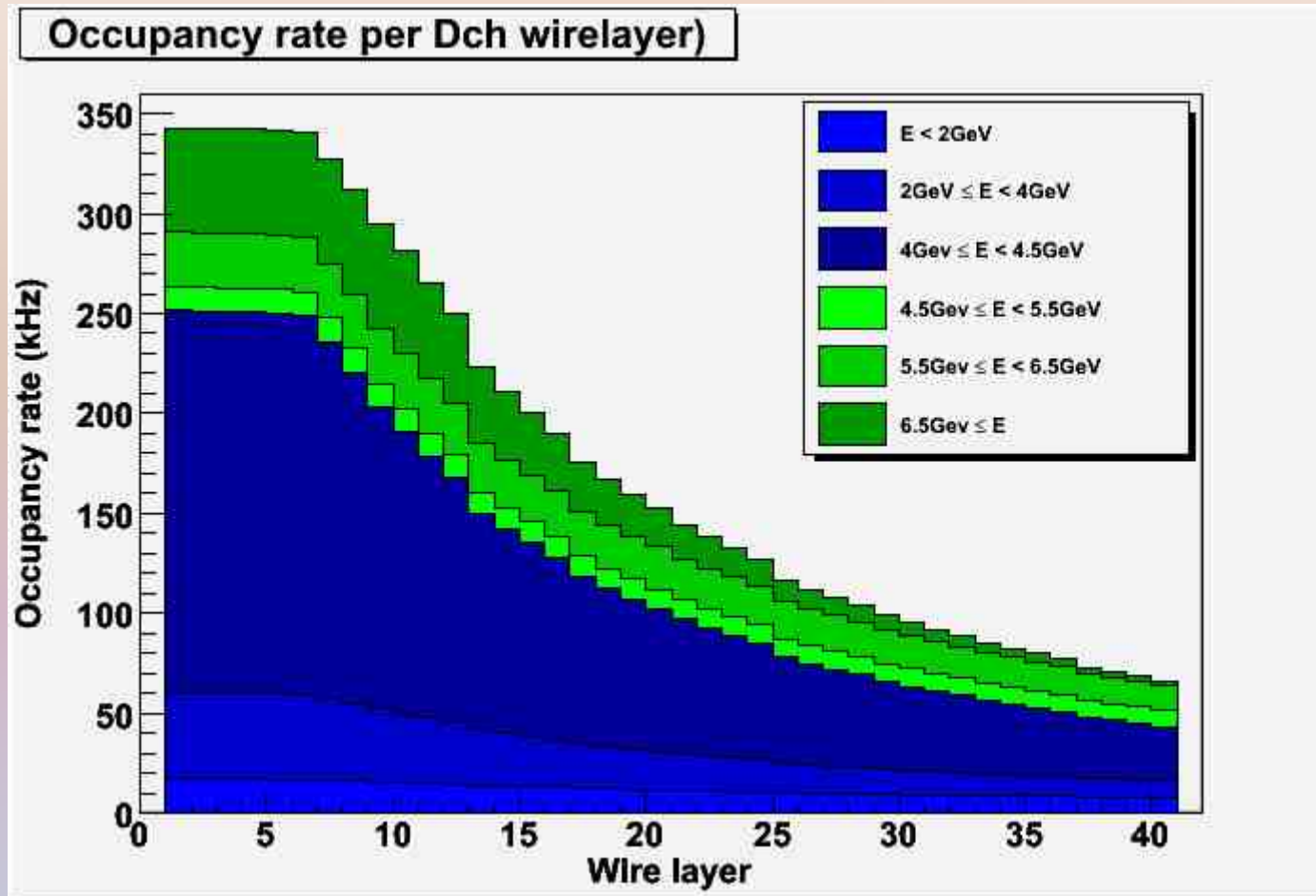
Longbwd Geometry: Occupancy Rates



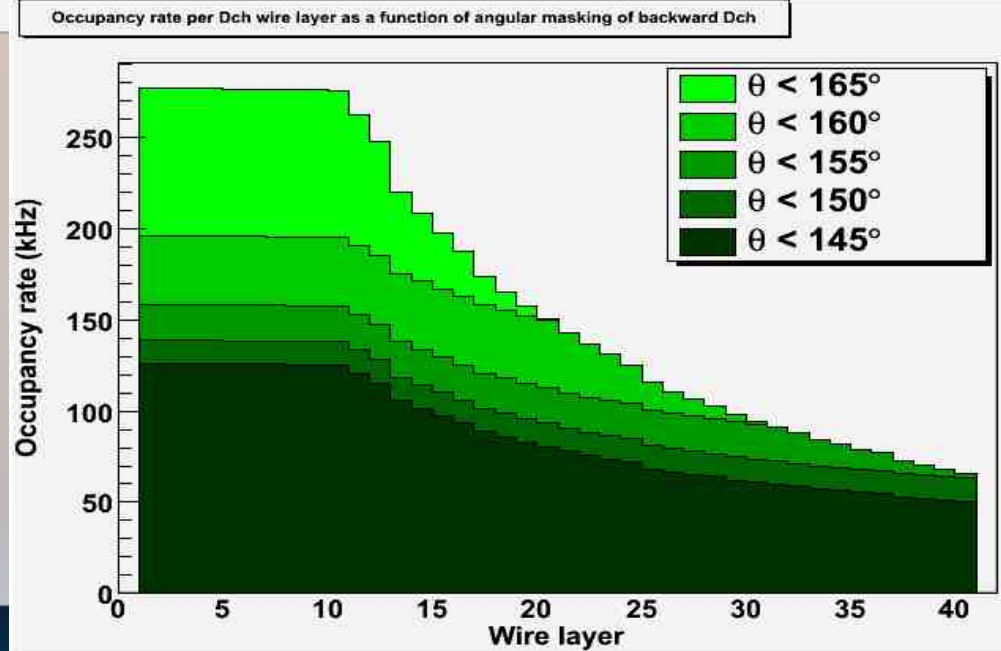
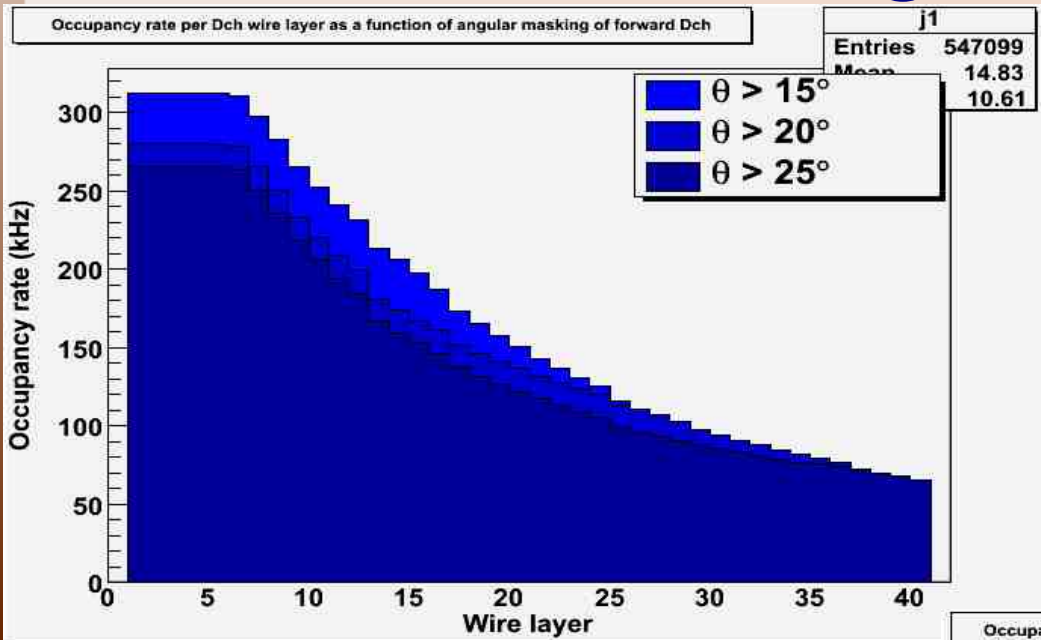
Longbwd Geometry: Angular Cuts



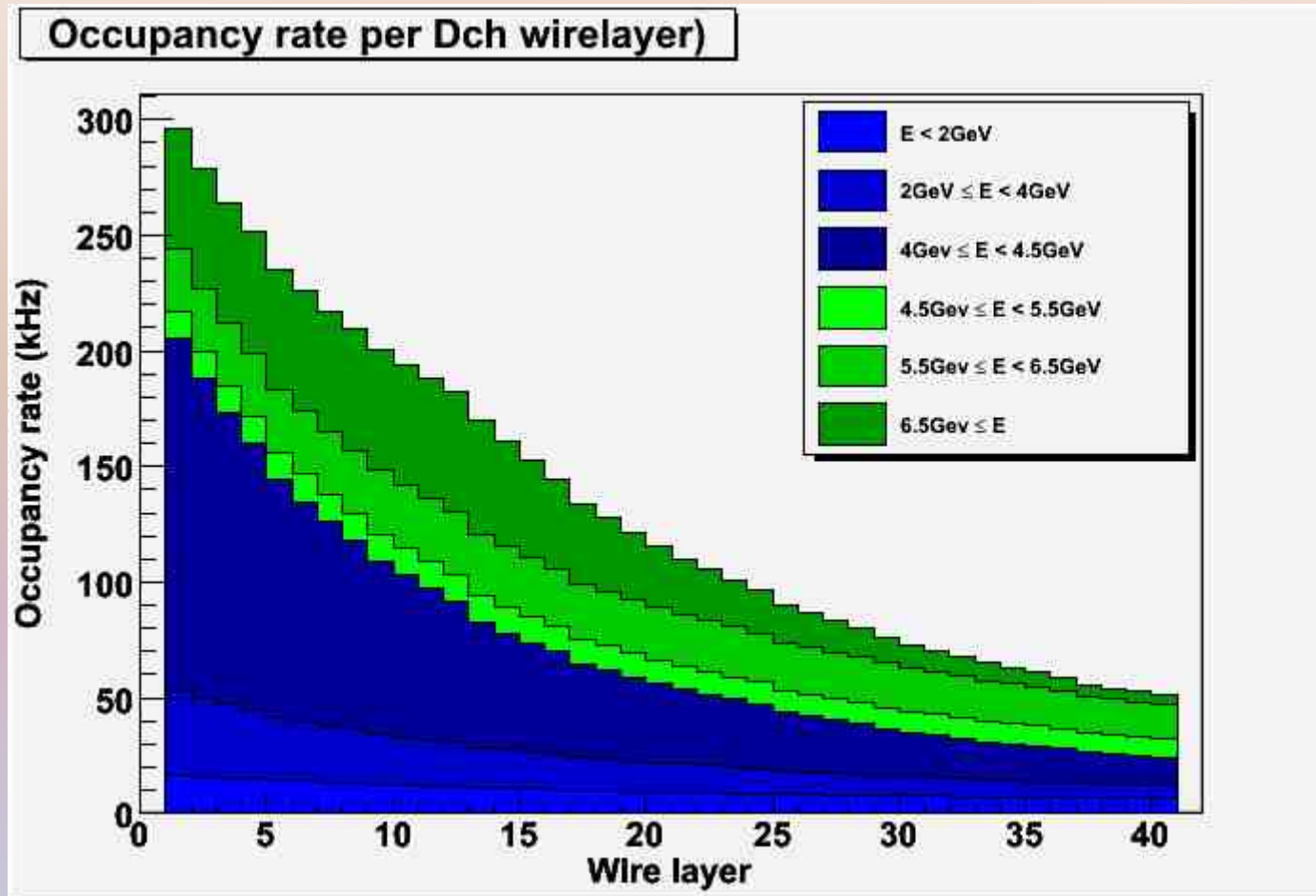
Longbwd_+10IP Geometry: Occupancy Rates



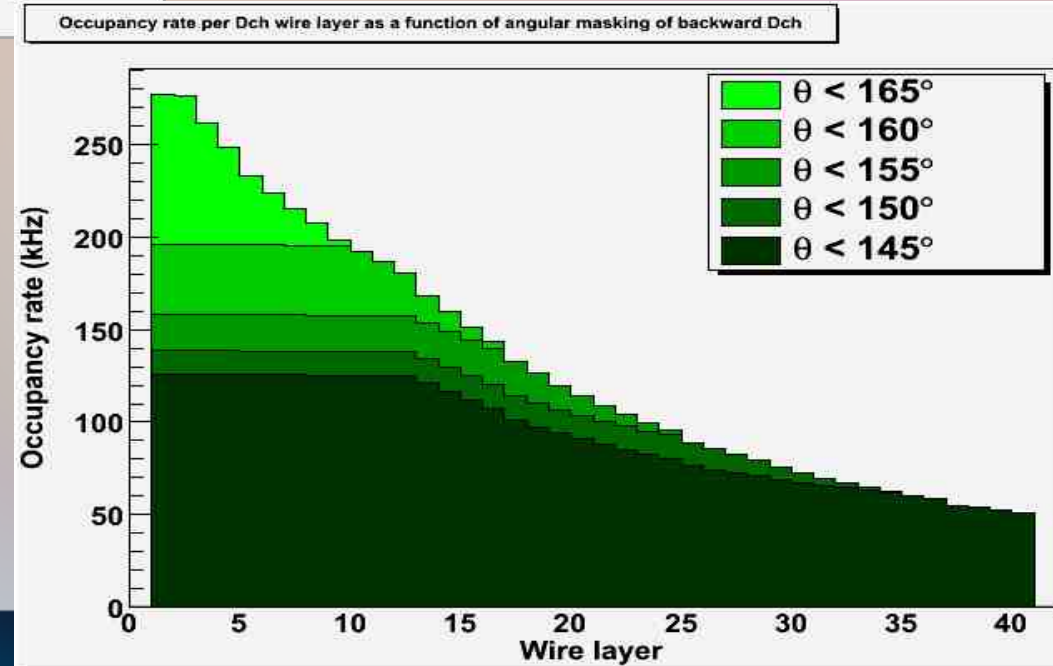
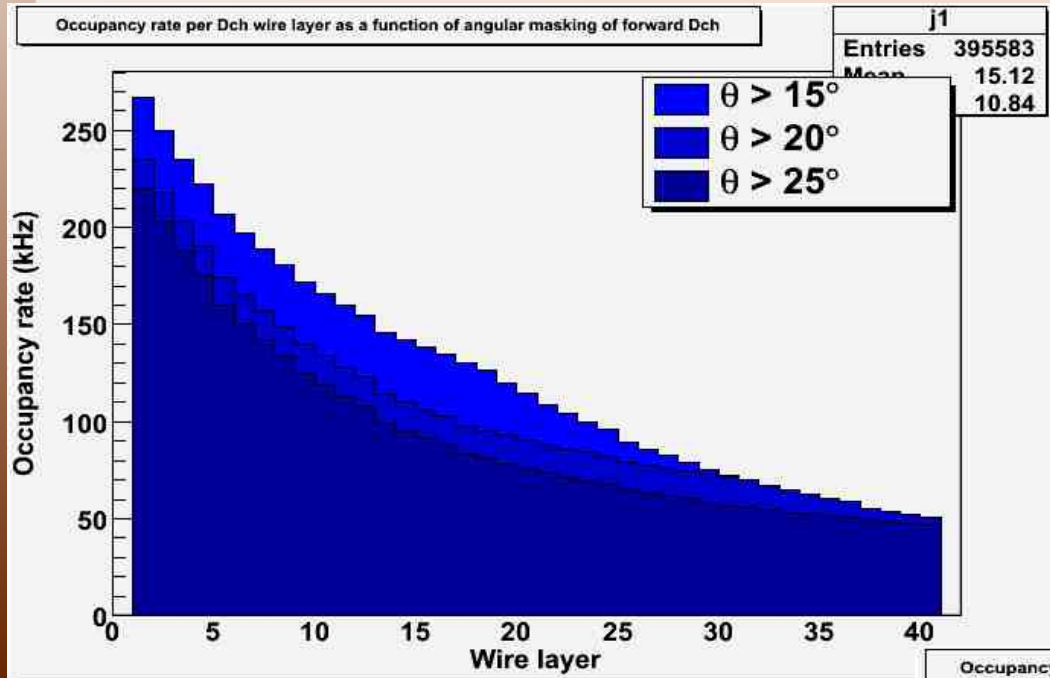
Longbwd_+10IP Geometry: Angular Cuts



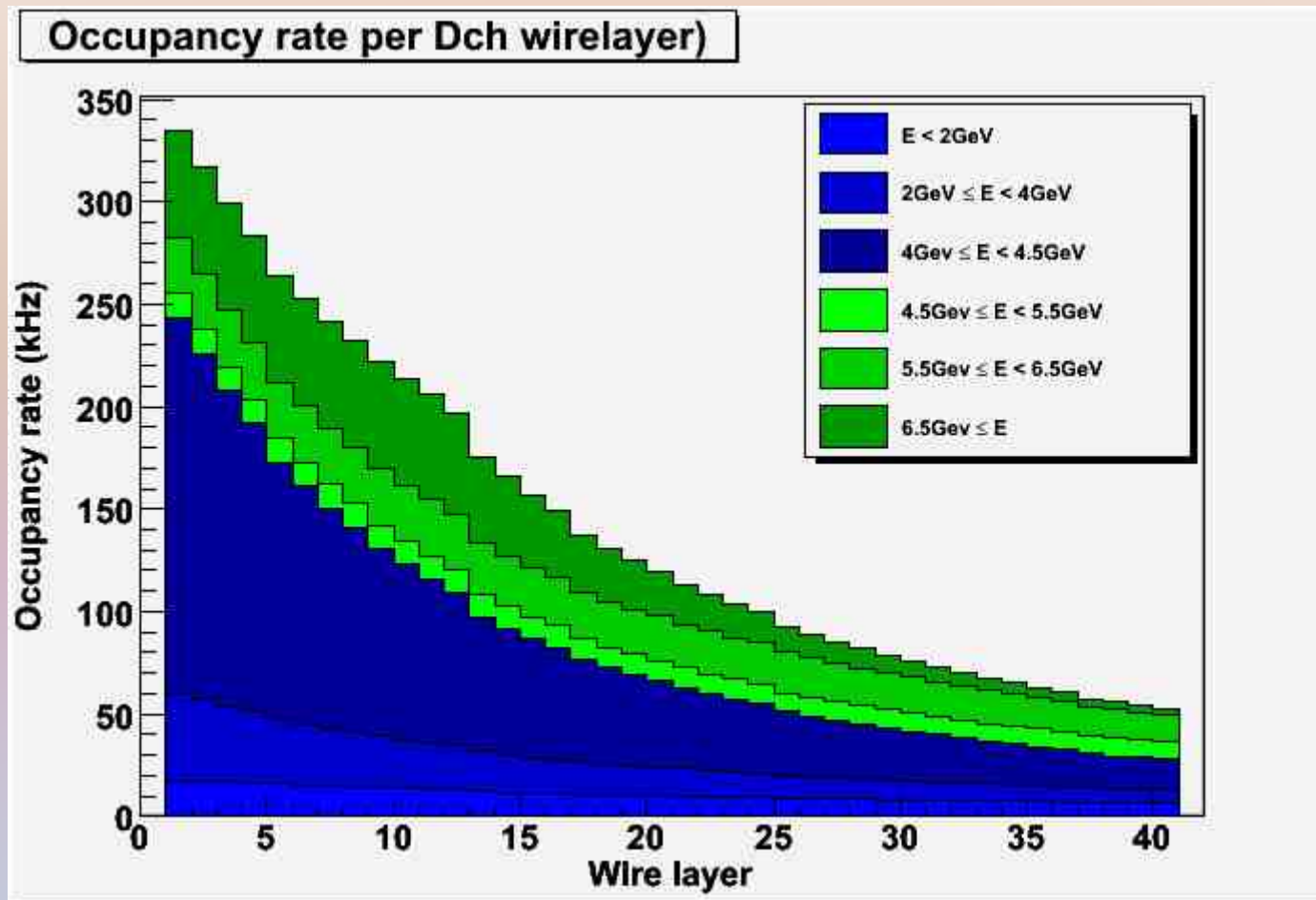
Longfwd Geometry: Occupancy Rates



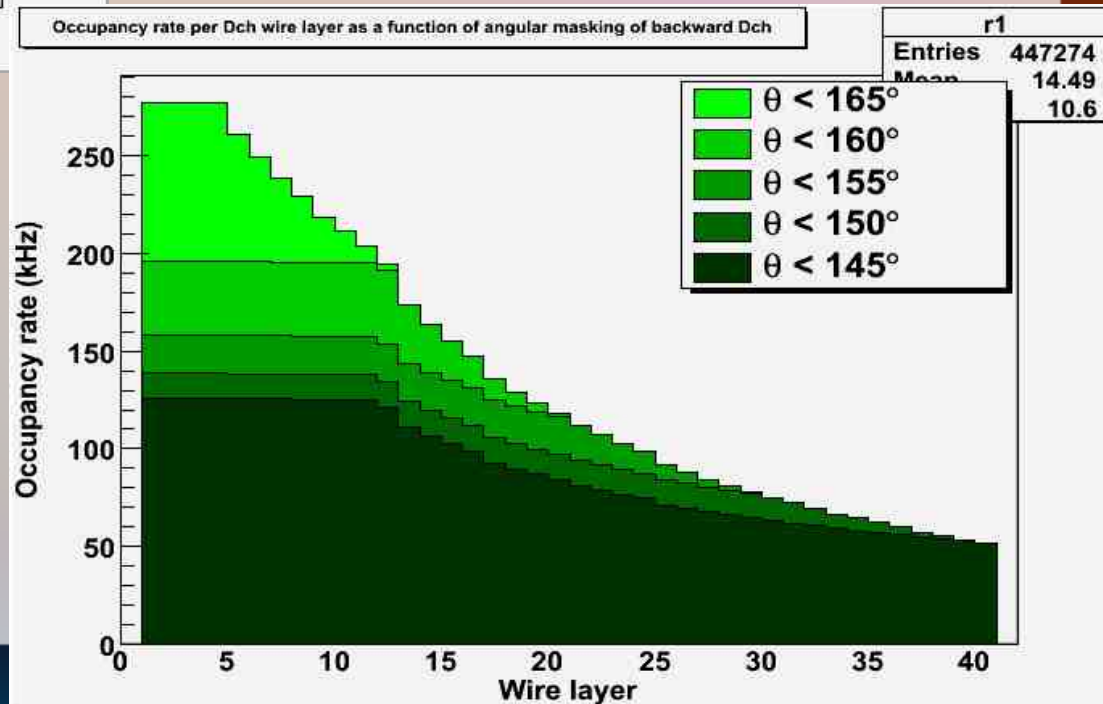
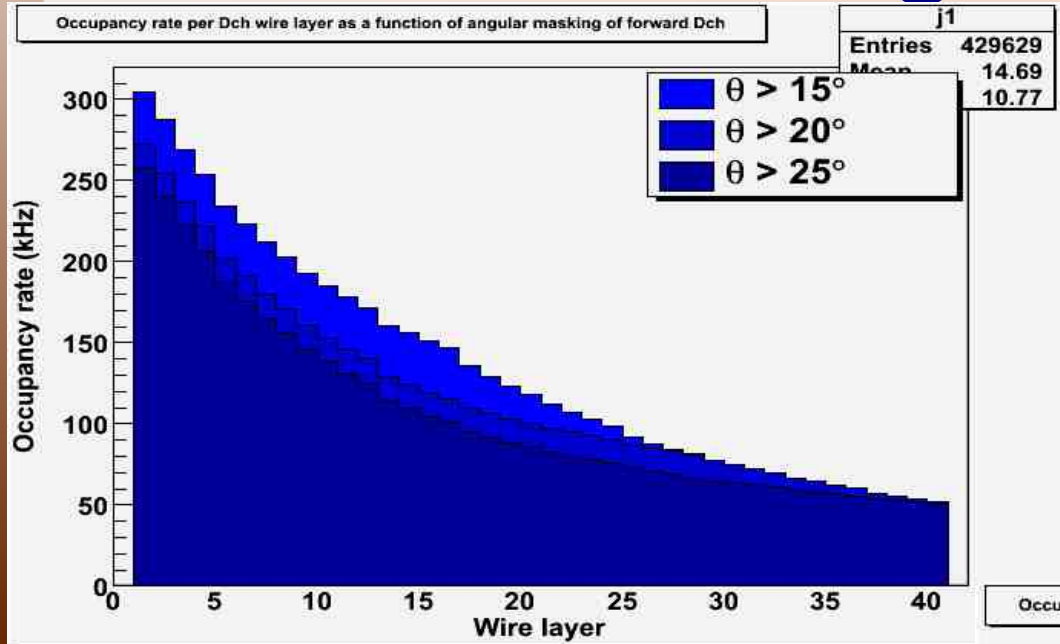
Longfwd Geometry: Angular Cuts



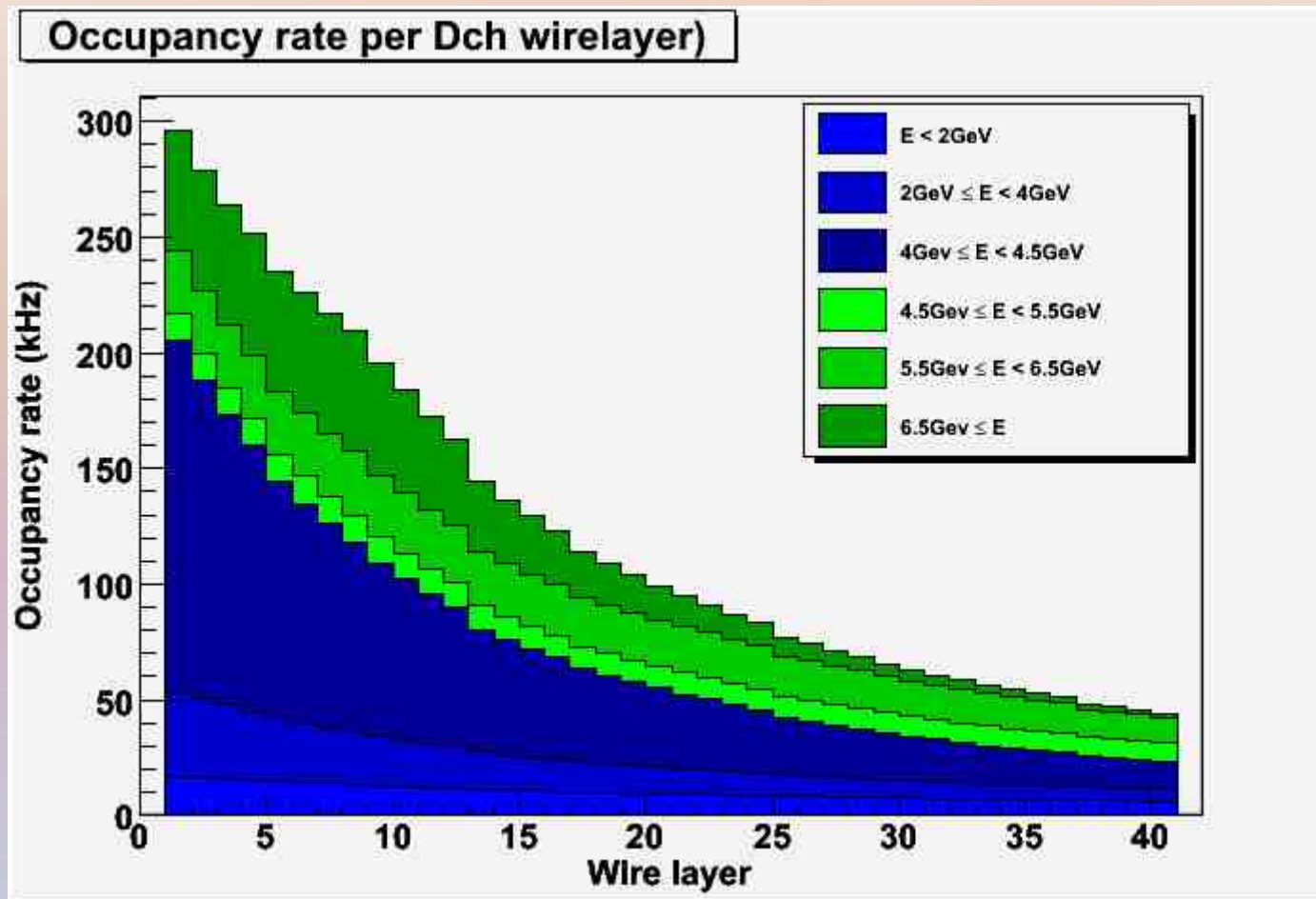
Longfwd_+10IP Geometry: Occupancy Rates



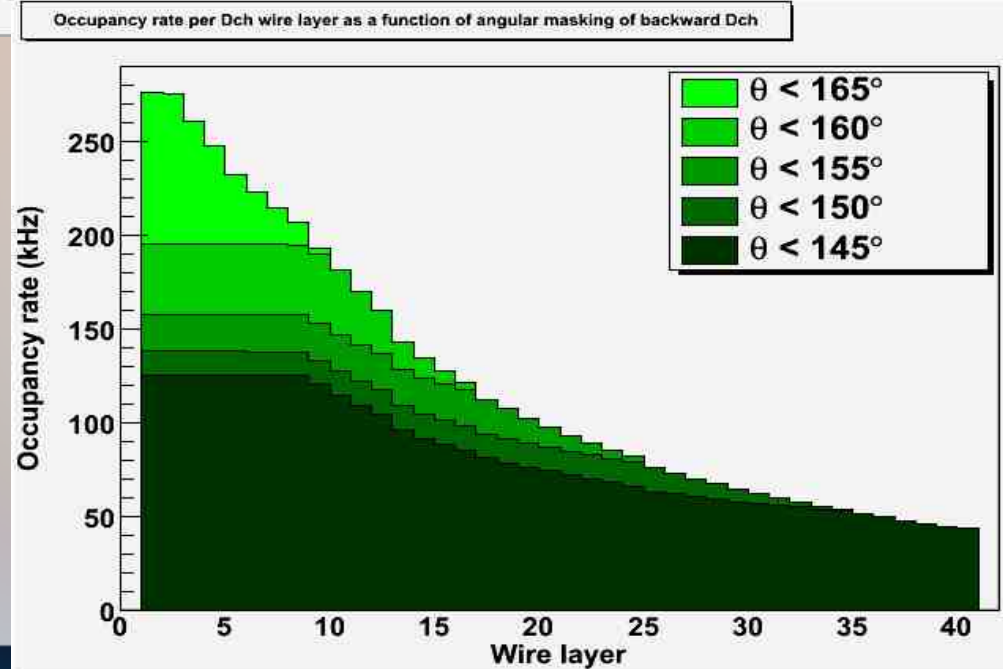
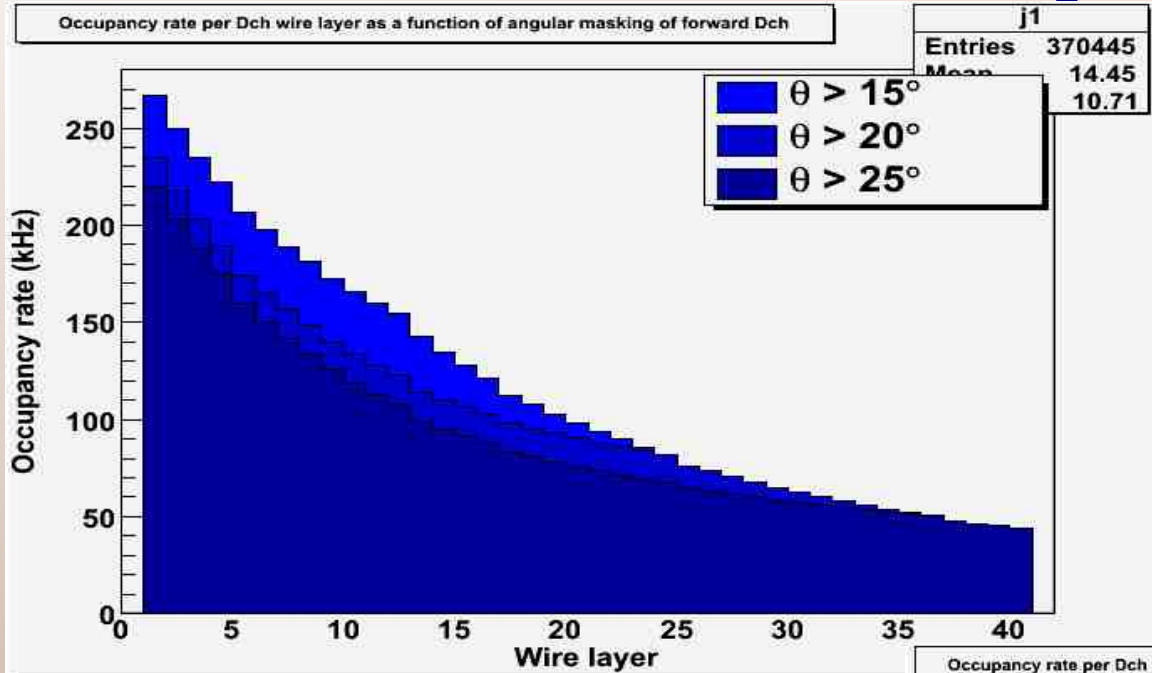
Longfwd_+10IP Geometry: Angular Cuts



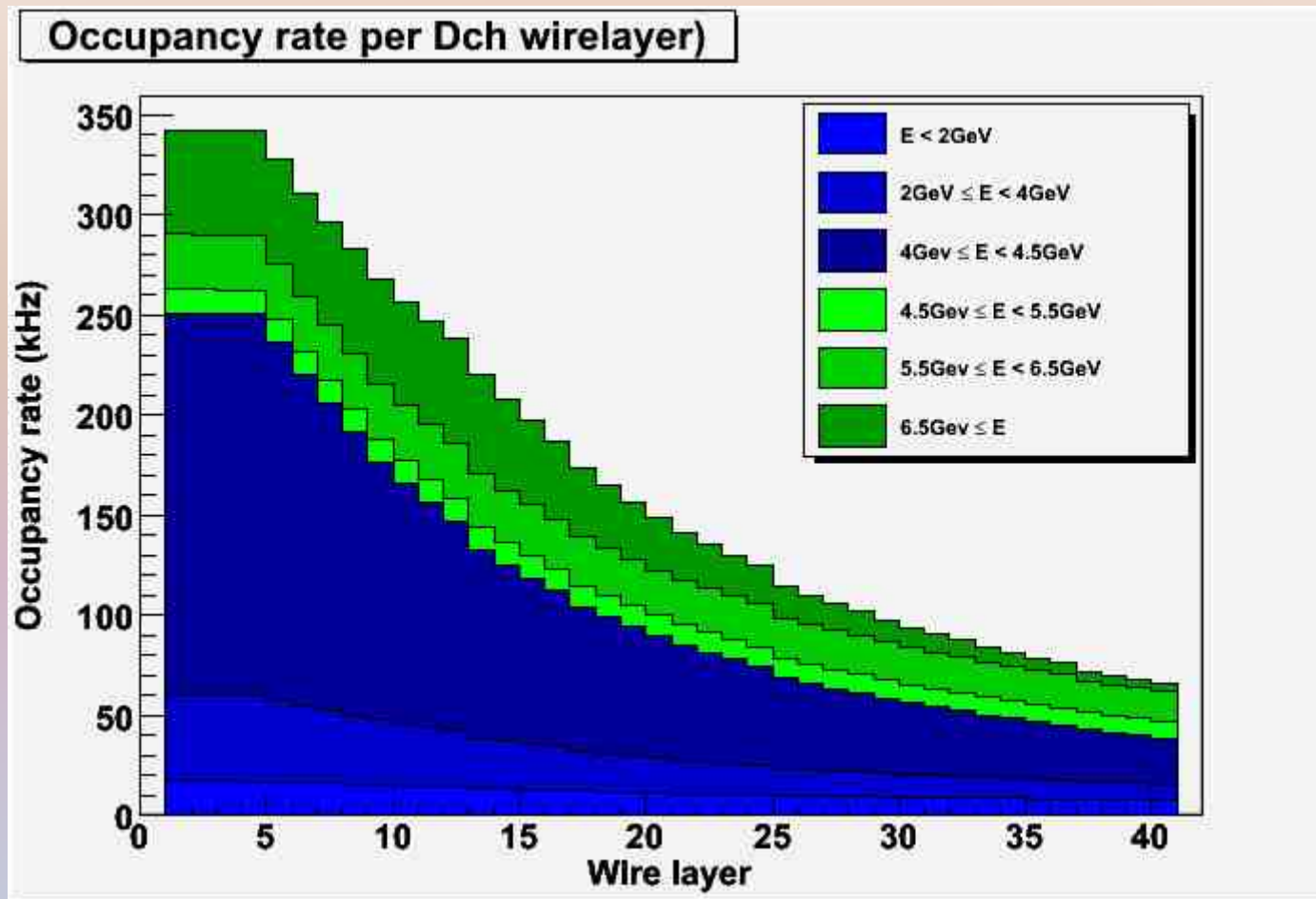
Shortfwd Geometry: Occupancy Rates



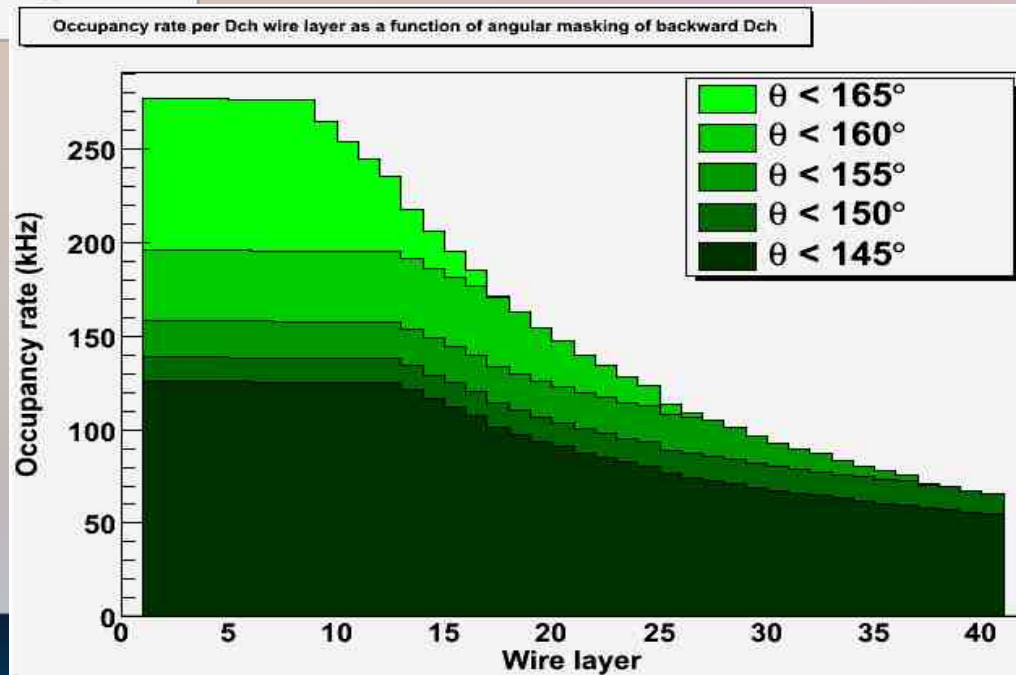
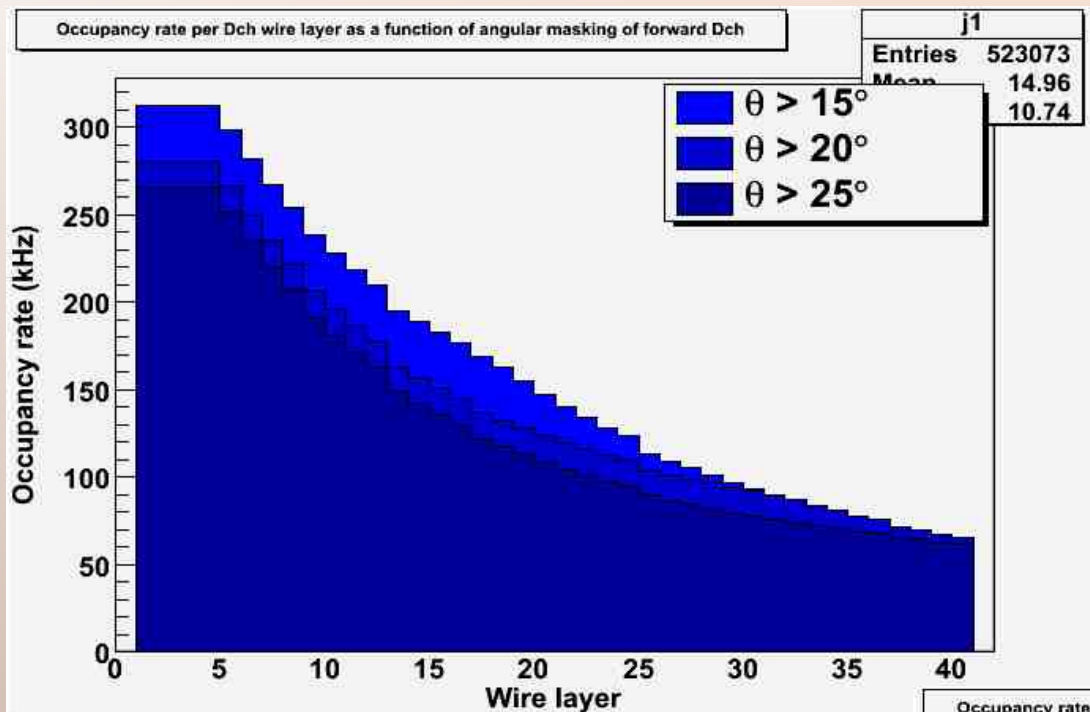
Shortfwd Geometry: Angular Cuts



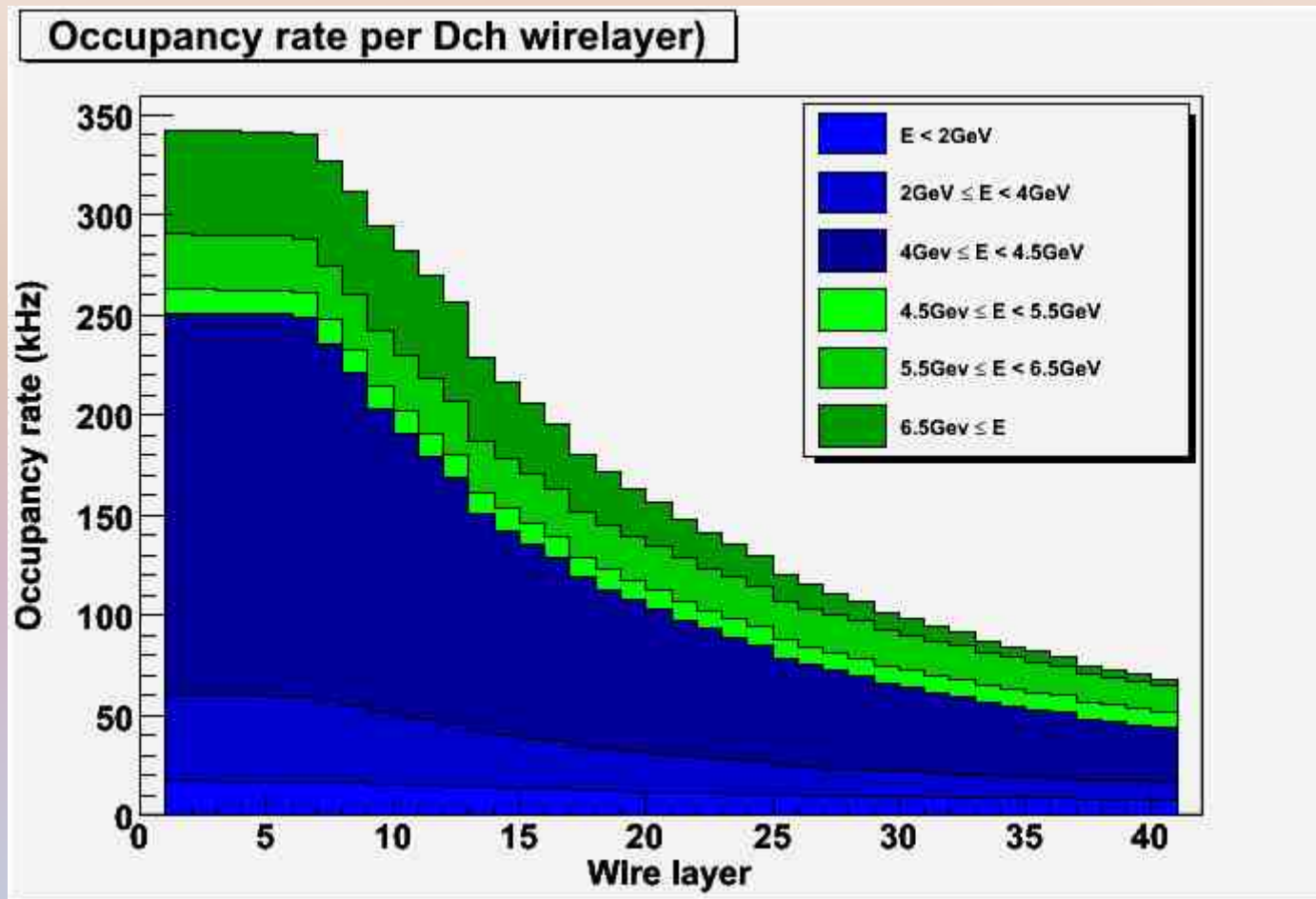
Longbwdfwd Geometry: Occupancy Rates



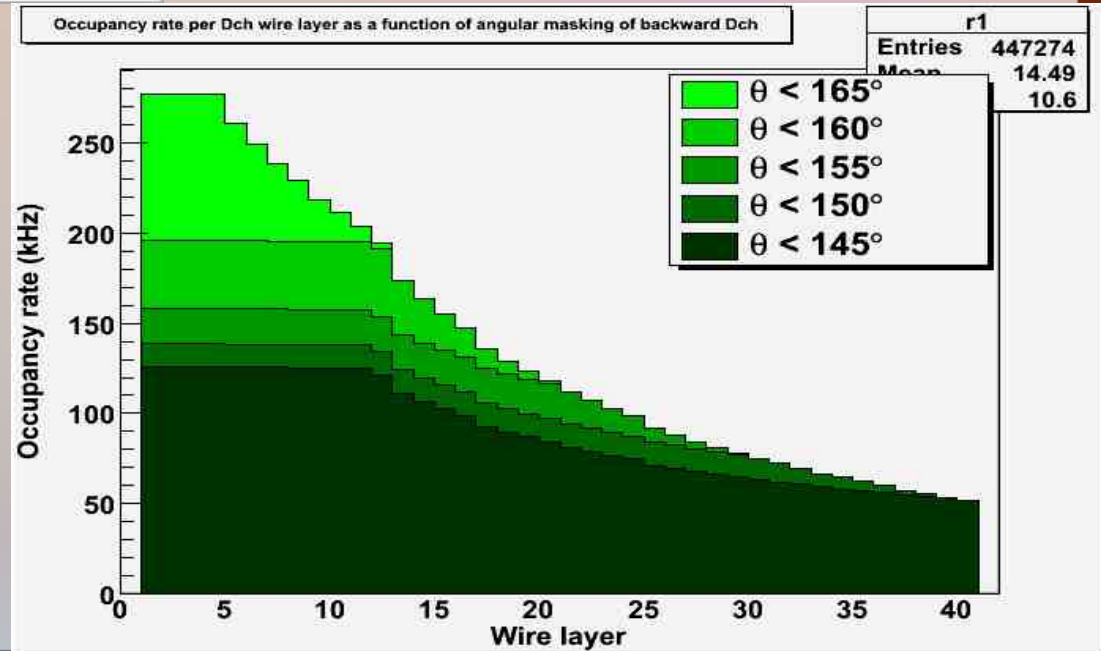
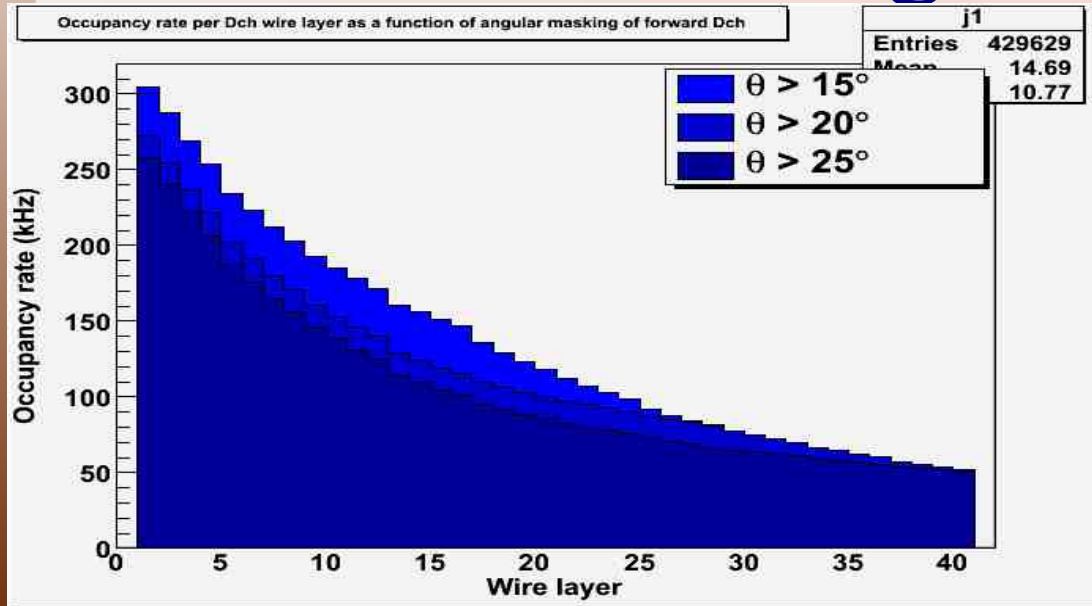
Longbwdfwd Geometry: Angular Cuts



Longbwdfwd_+10IP Geometry: Occupancy Rates



Longbwdfwd_+10IP Geometry: Angular Cuts



Conclusions

- I have much more data available from the ntuples I've generated, depending on what everyone wants to see
- Intend to use geometrical approach I described at February 16 meeting in order to check consistency of my results
- Need more time to resolve discrepancies with Dana's results
- Am now comfortable playing with the geometry xml files and hope to help write new ones for FastSim