MPGD layer simulation studies (Fast Simulation)

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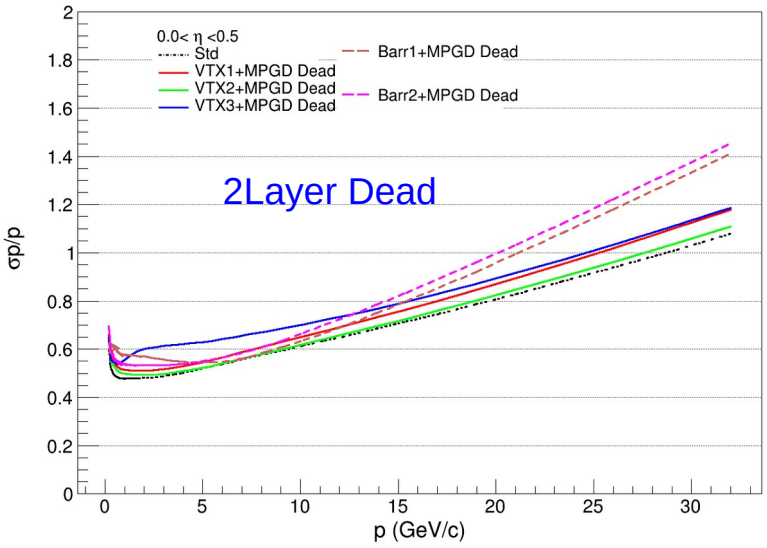
EPIC Configuration used in Fast Simulation

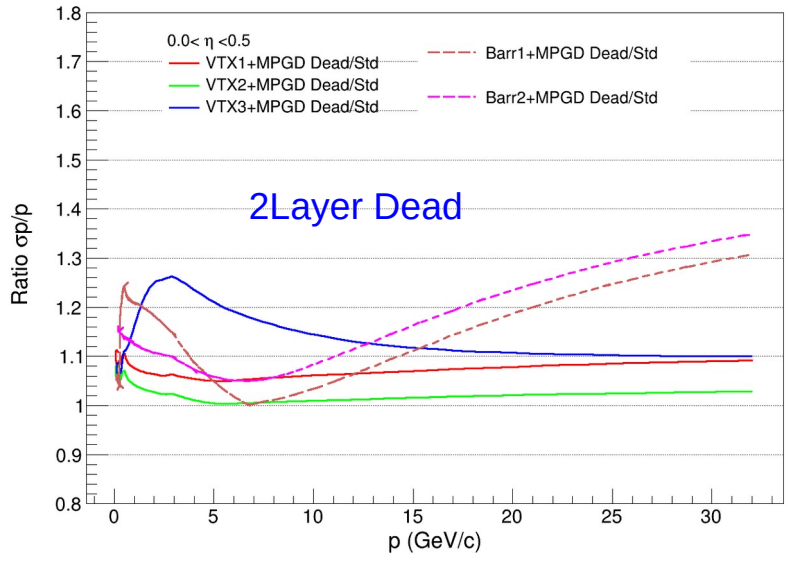
epic_brycecanyon

```
Detector EPIC: "Detector"
  Name              r [cm]              X0       phi & z res [um] layerEff
0. vertex           0.00              0.0000       -     -          -
1. bpipe            3.18              0.0036       -     -          -
2. VTX1             3.60              0.0005       3     3      0.95
3. VTX2             4.80              0.0005       3     3      0.95
4. VTX3             12.00             0.0005       3     3      0.95
5. BARRSUPPORT      13.50             0.0004       -     -          -
6. BARR1            27.00             0.0025       3     3      0.95
7. BARR2            42.00             0.0055       3     3      0.95
8. MM1    55.00             0.0050     150   150      0.95
9. TOF    64.60             0.0100      30   3000     0.95
```

https://wiki.bnl.gov/EPIC/index.php?title=Tracking#Tasks_list

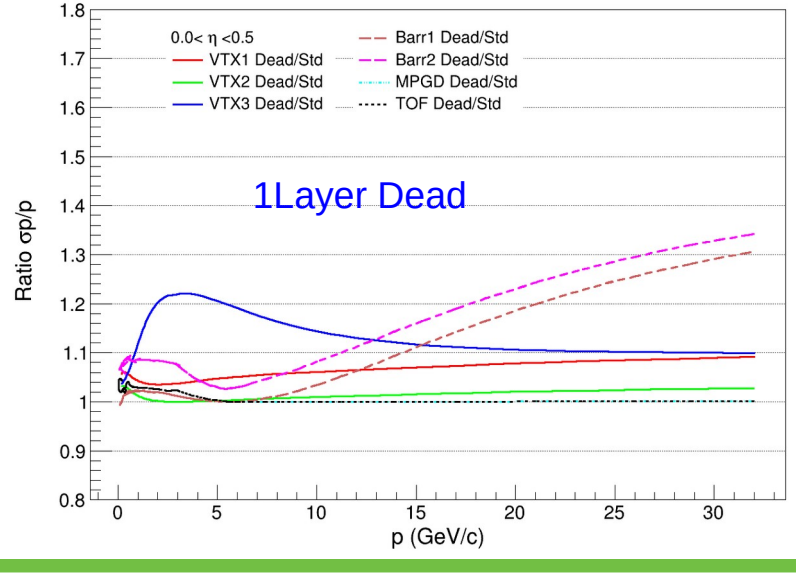
Momentum Resolutions (Dead Layers)





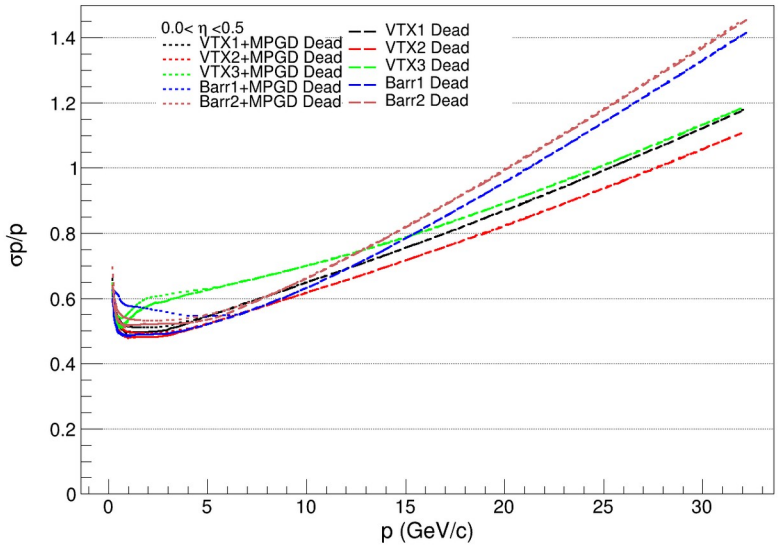
Comparison with Standard Configuration

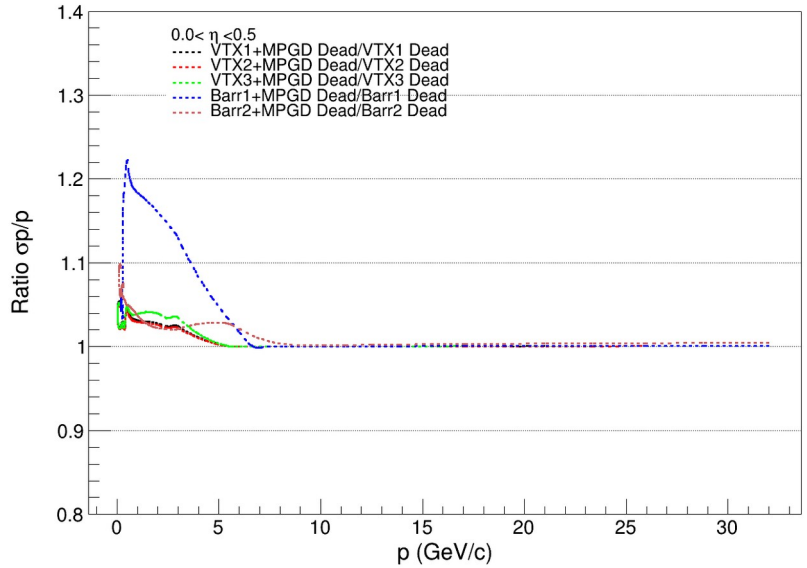
MPGD affecting performances (Barr1+MPGD) Dead



Momentum Resolutions (Dead Layers)

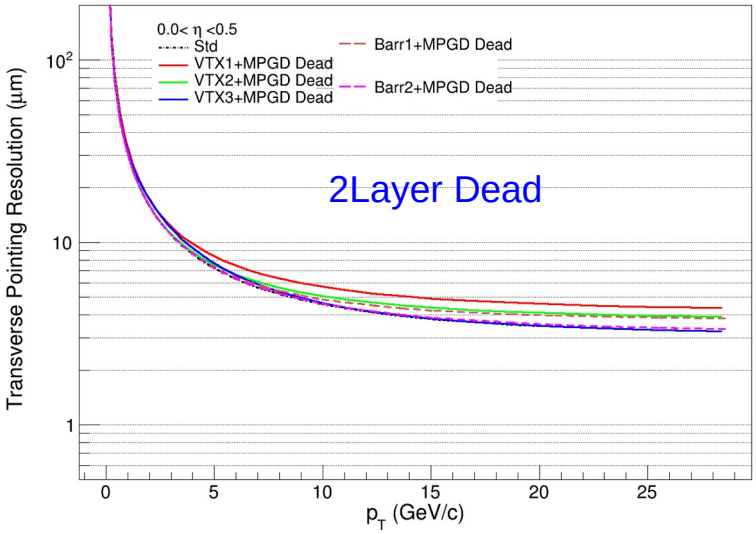
Comparison of 2Dead Layer vs 1Dead Layer

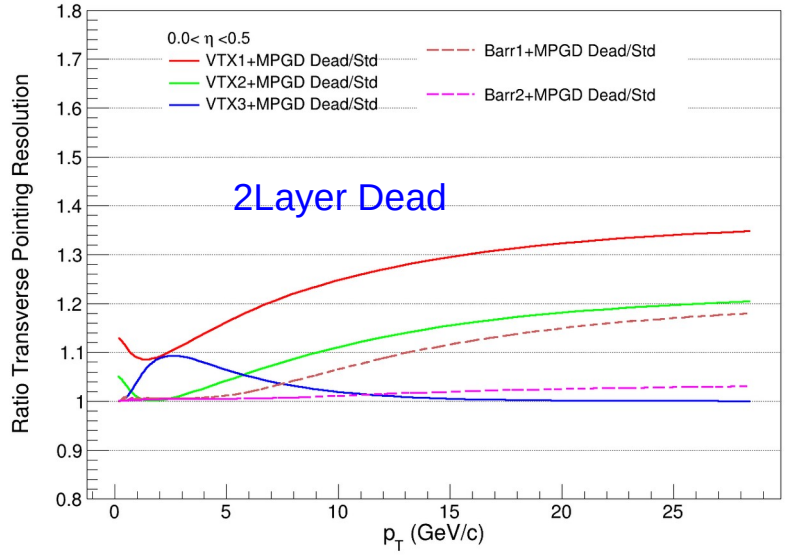




MPGD layer is playing an important role

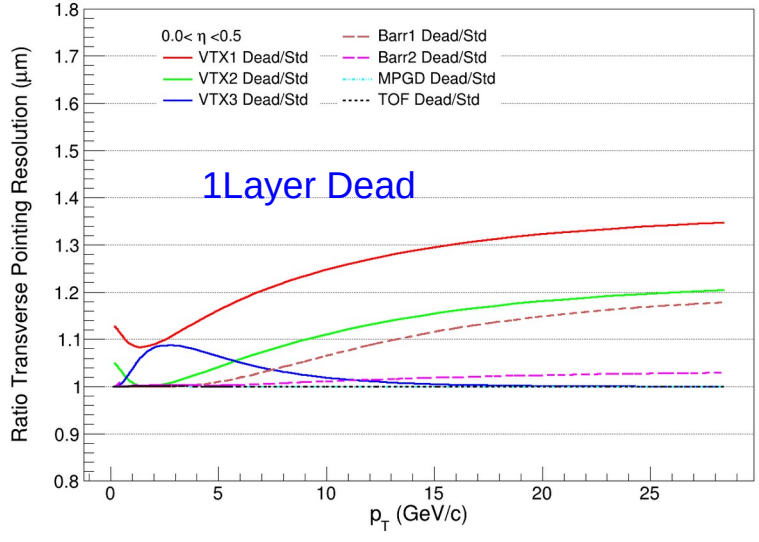
DCA_{xy} Resolutions (Dead Layers)



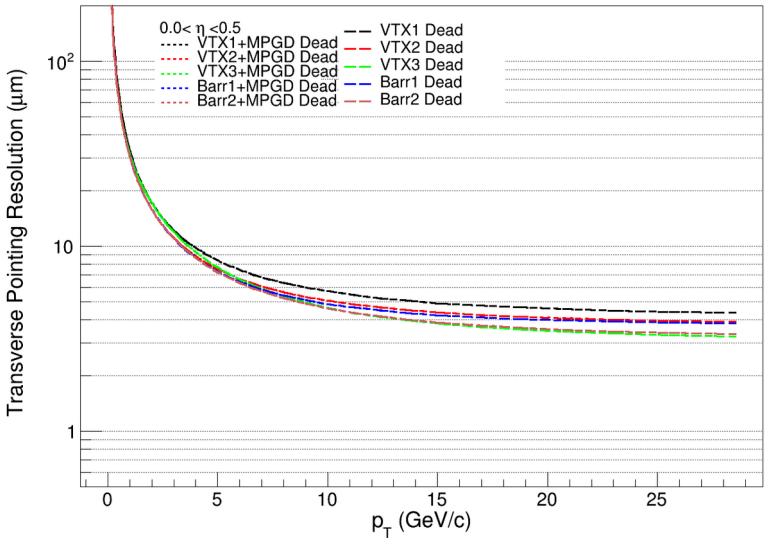


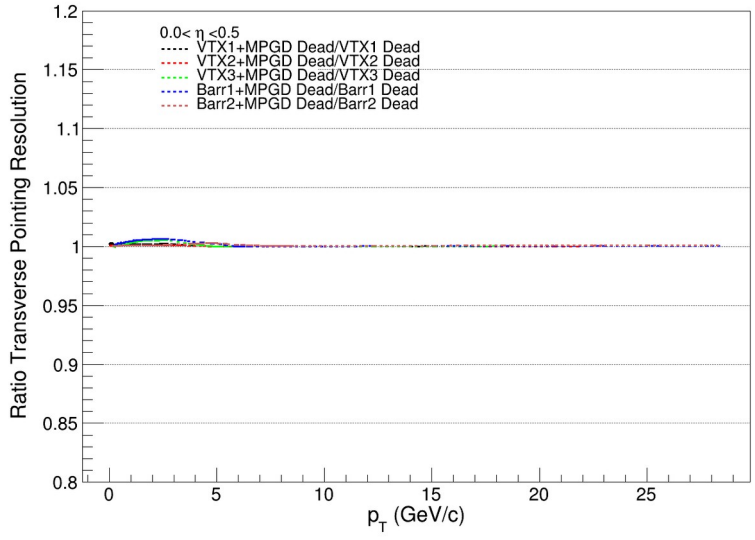
Comparison with Standard Configuration

MPGD is not affecting performances for DCA_{xy}



DCA_{xy} Resolutions (Dead Layers)





Comparison of 2Dead Layer vs 1Dead Layer

MPGD is not affecting performances for DCA_{xy} resolution