

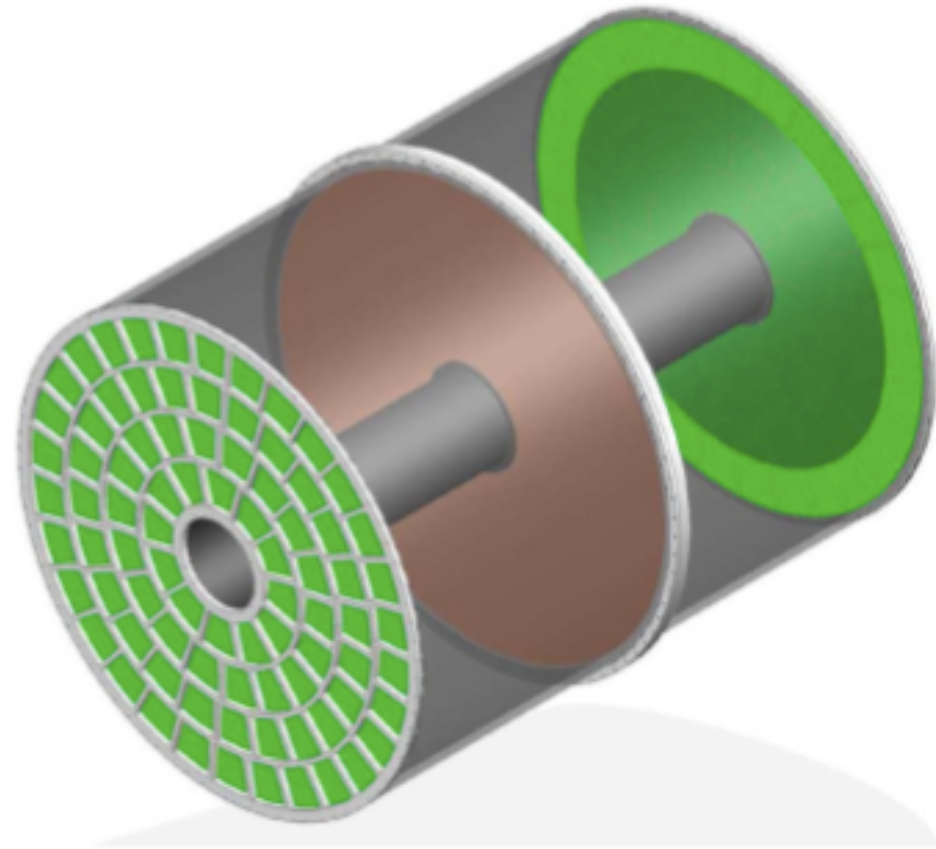
TPC Status in Mokka

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DESY

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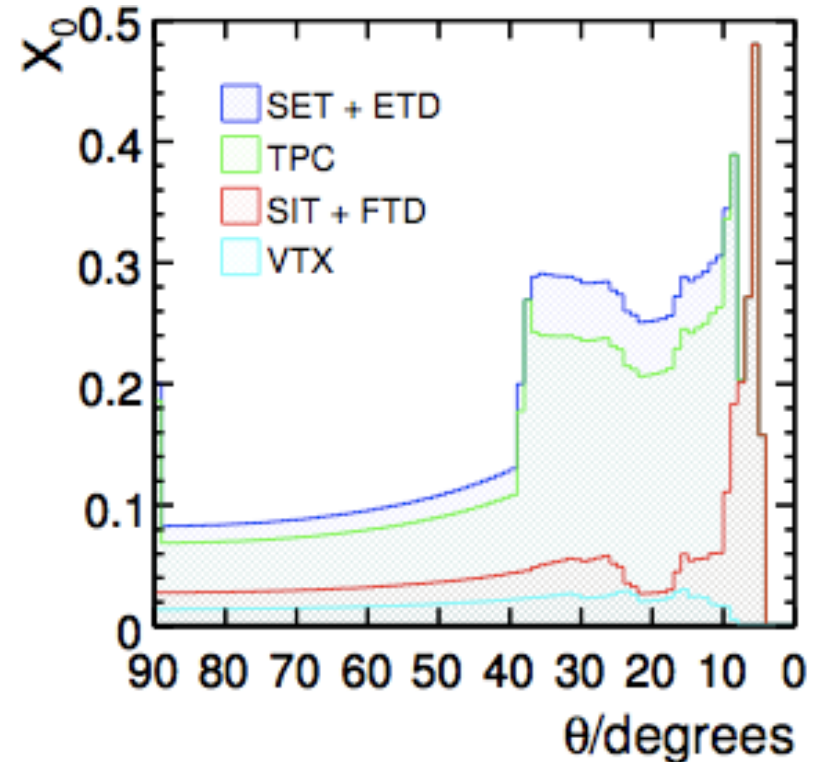
Material

- Structure – Aluminium Frame
- Gas – Argon Mixture
- Cathode – Copper, Mylar
- End-Plate is currently described as sequential discs of appropriate material e.g. copper, air, G10
- Field cage is described as homogenous cylinders



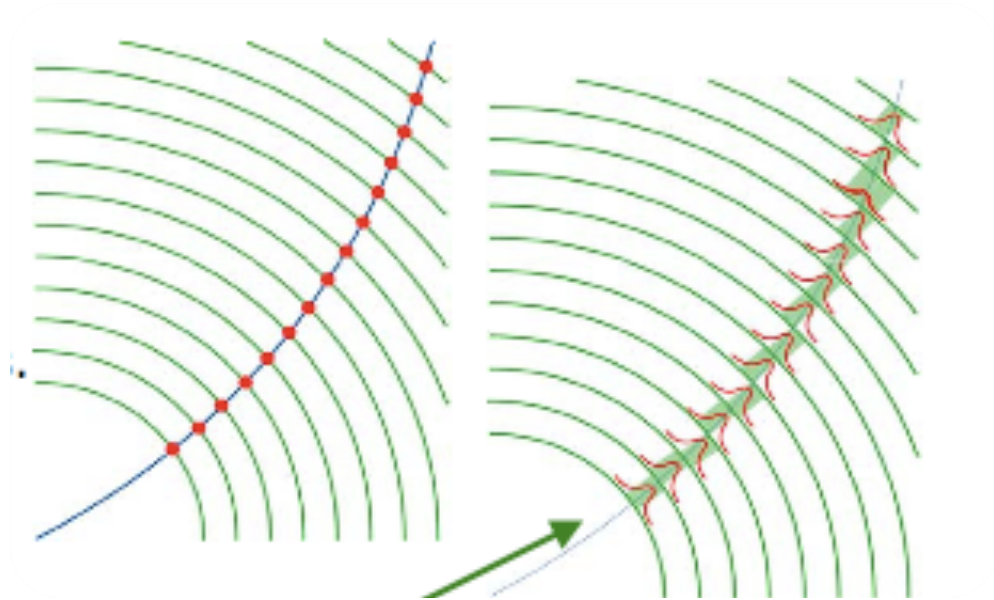
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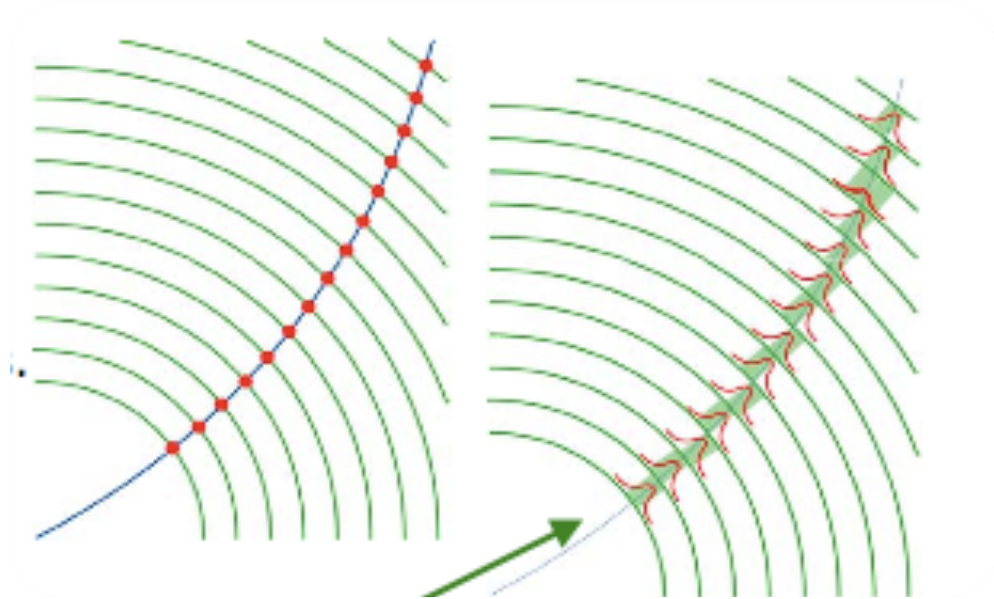
Digitisation

- TPC SimHits are produced in three types
- A separation is made between tracks which cross several pad rings and very low energy, “micro curlers”
 - for high energy tracks a hit is produced at the point where the track crosses the mid point of the pad ring
 - also for high energy tracks a hit is produced if it travels more than 10mm without traversing any boundary
 - very low pt tracks simply produce a hit every 10mm
- Need to clean up the use of TPCCut



Digitisation

- Parameterised resolution
- This should hold for different technology options
- There remains the need to address a more detailed simulation of the signal development.
- Although this more detailed simulation would not be used for mass production and will probably be done in LCTPC. It is also important for dE/dx.



| | $\sigma_{r-\phi}/\mu\text{m}$ | $\sigma_z/\mu\text{m}$ | | $\sigma_{r-\phi}/\mu\text{m}$ | $\sigma_z/\mu\text{m}$ |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----|-------------------------------|------------------------|
| VTX | 2.8 | 2.8 | FTD | 5.8 | 5.8 |
| SIT/SET | 7.0 | 50.0 | ETD | 7.0 | 7.0 |
| TPC | $\sigma_{r\phi}^2 = 50^2 + 900^2 \sin^2 \phi + ((25^2/22) \times (4/B)^2 \sin \theta) z \mu\text{m}^2$ $\sigma_z^2 = 40^2 + 8^2 \times z \mu\text{m}^2$ | | | | |