

# Status of the Tracker Reconstruction

C Hunt

*MICE VC*

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## Recent History

- This process was initiated following the review of Chris' paper,
- Aim to reduce systematic uncertainties and improve MC-Data comparisons,
- Enlisted Durga and Tom,
- Tackled jobs based on priority.



## The Todo List

- Tracker recon efficiency

Finished. Merged into MAUS. Under Test.

- Tracker MC Noise model,

Key components addressed. Now tweaking.

- Modelling the tracker density and  $Z$ ,

Have the materials. Just need to figure out some numbers

- Improving the momentum systematics.

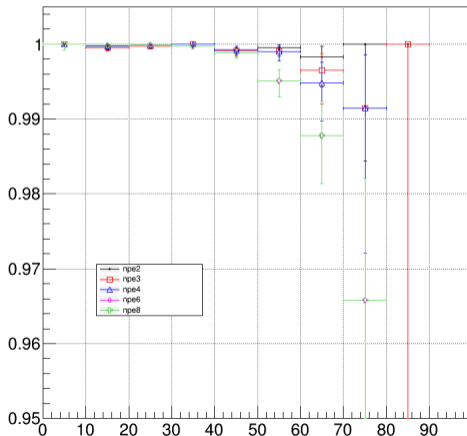
The most difficult task, but not an immediate priority.



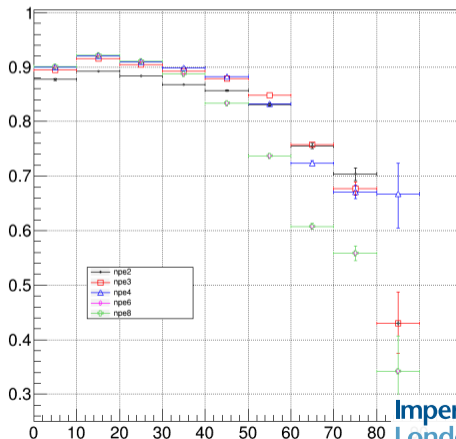
# Recon Efficiency

Durga is finalising the analysis with the new version  
Still some bugs to fix.

Track Efficiency in  $P_{\perp}$



Trackpoint Purity in  $P_{\perp}$



# MC Noise Model

- Moved to a data-driven model to produce realistic noise rates within the MC,
- Made some assumptions regarding the signal strength of the noise,
- Remaining tasks are being handed to Tom, e.g.
  - Improved Bad Channels model,
  - Improved Noise NPE model,
  - Analysis of noise during running.
- Durga helping with examining the quirks of the MC digitization.

*Being tested  
Under discussion  
Up and running*



## Conclusions

- Plan to have a new version of MAUS + geometry by Xmas,
- Solves three of the four items on the todo list,
- Will target the field-stepped track fit in the new year.

I think this unlocks Chris' analysis from the track reconstruction - job done!

