

SciFi Resolutions and Performance

C Hunt

MICE Analysis Workshop

29-08-2018



Status

- No changes/issues with reconstruction other than low- p_t tracks,
- Everything is fine for existing analyses
- But we can still do better!



Status

- I think Pattern Recognition is now the weakest link,
- Been looking at efficiency as a way to counter the resolution issues,
 - If we find more tracks we may do better,
 - As long as we find the tracks we can improve the fitting later.
- Deriving different methods to find tracks without PR,
- Only scintillation light can really produce high-NPE clusters, so count them!



Status

- Roughly 3-5 noise clusters per event, (could fix!),
- Typically expect $\sim 1\%$ more tracks per event than we find,
- See additional tracks in events when not expected,
- Ideally reduce noise and improve selection efficiency.

The next ideal is perform track selection without using a fit.



The Plan

- Impose a channel-by-channel noise cut, requires retro-upgrading the calibrations,
- Tools in MAUS already work,
- Playing with different routines to improve track finding I think I can have higher efficiency with less noise!
- This means all the low-pt tracks will be found, even if the resolution needs improving.

Note that the refitting routines already exist in MAUS!

