

Tracker Resolution and Efficiencies

C Hunt

MICE Analysis Workshop

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Resolutions

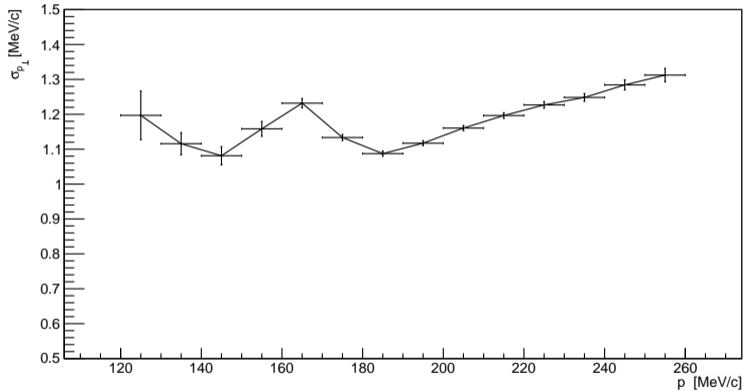
- Resolutions have been stable for a while now,
- For the standard Cooling Channel settings there are no issues,
- Currently looking at the 07469 data set as the field uniformity has some effect.

Currently being scrutinised as it affects binned methods and systematic errors.

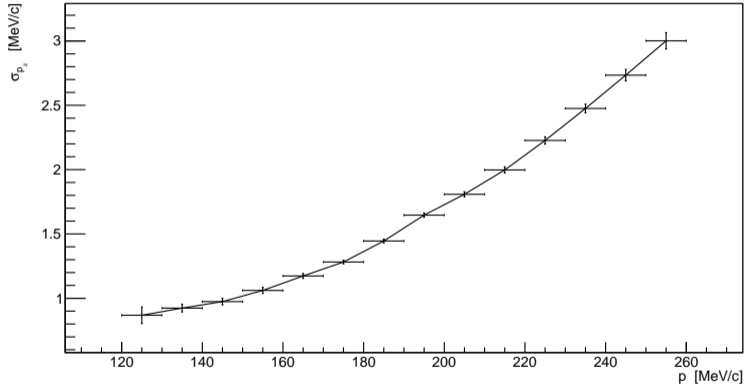
Trying with p instead of p_z ...



07469 Magic P4 - Transverse



07469 Magic P4 - Longitudinal



Systematics

This is where the fun really starts!

- Currently Developing a procedure for understand the systematic error in the field alignment.
 - This build on work that was performed last year,
 - Currently at the point where we decide on systematic error or a correction,
 - I need to validate my results with Victoria in the next few days - so no plots yet unfortunately!
- Next comes the uniformity
 - Much harder to quantize and understand,
 - Potentially easier to accomodate,
 - Will likely just be a systematic error calculation based on MC data.
 - Trick is how well do we trust the MC field.



Efficiencies

- Had a very rushed and frantic period, followed by Xmas!
- I'm Waiting to hear any complaints from MAUS V3.1...

Still running Adam's existing analysis on data when needed - no significant changes are witnessed, however the new processing could reveal a lot.



Efficiencies

Things to Consider.

- Currently in a delicate state - the Minuit implementation had a rapid rethink last year
 - Testing went well,
 - but it was very rushed.
- There was a little switching between fitting methods (Minuit and LSQ)
 - Minuit is preferred as the LSQ sporadically loses spacepoints,
 - This has never been rectified
 - As long as the minuit efficiency is high we don't have to worry.



Noise and Efficiencies

Have been working on a new noise reject algorithm.

We current see events with a lot of noise digits - these could essentially be almost completely removed.

- Performance is excellent!
- The missing component is the efficiency,
- Recover more than 99% of the same tracks - but not yet sure its perfect.
- Reached the point to trying to figure if that last $< 1\%$ are noise or real...



Conclusions

- Currently focussed on the 07469 paper,
- Develop procedure and experience in calculating systematic errors,
- When we get it right we can apply to future measurements.

- Working on upgrades to noise rejection,
- Hopefully the algorithms are stable now. . .

Please shout if something looks a little odd.
(But you might not get an immediate response.)

