SciFi Resolutions and Performance

C Hunt

MICE Analysis Workshop

15-05-2018

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Introduction

- A brief outline of the plots required for the system performance paper,
- Slightly different to previous approaches we care about specifically about data,
- Need to use official MC with correct settings,
- Need to include measures deduced from data alone,
- And comparisons to MC we're not testing the algorithm.



Outline of the Section

 Hardware Review - P. Kyberd Ref. Hardware paper 	1 Pages
 2. Low-Level Reconstruction - M. Uchida Digit and cluster distributions Ratios of expected values 	1-2 Pages
 3. Noise and Efficiency - C. Hunt Electronics Noise Efficiency Reconstruction Noise 	2 Pages
4. Performance Over Time - P. Kyberd	0.5 Pages

Total 4.5-5.5 Pages

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What's in Hand

- MC resolutions analysis,
- MC efficiencies analysis,
- Previous notes and papers: Hardware and software,
- Basic Data analysis tools distributions and efficiencies.



What's Missing

- Look at efficiencies in data (A. Dobb's Analysis)
 - This needs to be reviewed,
 - Understand the algorithms and the results,
 - Need to be applied to new data.
- Noise Analysis Really a missing piece.
 - Electronics noise compared to calibration,
 - Expected cluster/spacepoint/track rates vs. data,
 - Use C. Rogers spacepoint noise analysis,
- Performance over Time Analysis
 - Not be been investigated in full detail before,
 - Basic tools already exist.
- The Text!



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A Flavour of Things to Come

Plots Designed for the Emittance Measurement Paper Not all have been validated!



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Conclusions

- A lot of the basic tools are ready to roll,
- Once I track down the relevant MC data set a lot of plots can be produced almost immediately,
- Some work required to make use of Adam's efficiency measurement,
- Some work required to perform the noise analysis,
- Some work required to address the performance over time analysis.

I think we really need to just put some words down in the next few weeks.



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