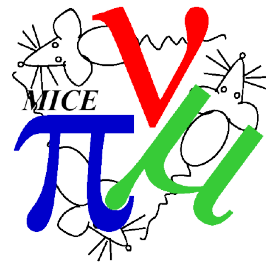


Global Reconstruction Introduction

Melissa Uchida
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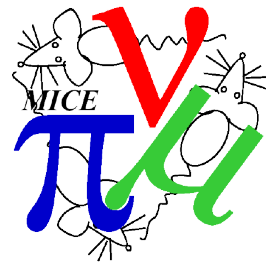
CM41 9/2/15

Changes Since Last CM



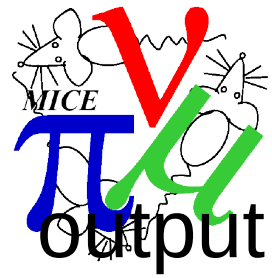
- Now use Runge Kutta method!
- Previously manual transfer maps were between virtual planes as needed. Using:
 - $C^T = (A^T W A)^{-1} A^T W B$
where A is formed from polynomial expansion of PS vectors at start plane, B from PS vectors at end plane, and W is a weighting based on detector accuracy.
- Had difficulties when propagating tracks backwards.
- RK is already included in MAUS (dE/dx needs to be added but should be quite straightforward).
- And works well.

Progress Since Last CM

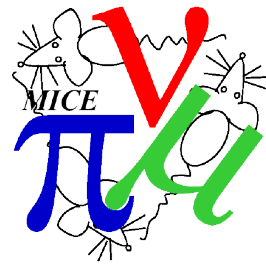


- WE NOW HAVE TRACKS
- AND PID!
- US and DS are treated separately
- DS tracks are currently matched and have PID.
- US tracks are coming along
- Through-going tracks with PID, for commissioning are in development
 - no field
 - no absorber tracks
 - TOF1 to TOF2.

The Future



- It would really help to have all detectors to data in global coordinates of x, y and z.
- Chris Hunt and Chris Heidt are now developing a system for translating local detector coordinate systems into the global MAUS coordinate system.
- Global reconstruction is developing a set commissioning tools allowing track reconstruction and PID to be done without field and no absorber for efficiency and alignment studies.
- Efficiency and Pt calculations are coming along,
- upgrades to track matching and PID will be iterative.



A huge well done to Celeste and
Jan