Beam Monitor in SHOE

FOOT Software Meeting 22/07/19

Yunsheng Dong

TABM* in newgeom

What's new since the last FOOT meeting

- Versioning of BM done.
  Input files (%=can change for different run/campaign):

  ./config/TABMdetector.cfg   --> general config file,
  ./config/%TABMdetector.map   -->TDC mapping between the TDC channel and BM cells
  ./config/%T0_beammonitor.cfg   -->T0 files
  ./geomaps/TABMdetector.map   --> BM geometry parameters

- The BM config file (TABMdetector.cfg) now is commented and user friendly, is read with a new FromFile method (based on TAGparTools). Data analysis people should be able to understand and modify the file

- The BM geometry file (TABMdetector.map) includes the BM sense wire displacements and it is read by the TABMparGeo

- BM debug updated with FootDebug and FootDebugLevel:
  Debug level from 1 to 4;
  3-4 will print a lot of information for each hit/track: better to be used only if the code crashes in the TABM*

- T0 files NOT calculated from the ST (as it will be), but are calculated from the trigger time read by the TDC. This has been done only because the WD events had problems in the builder files and up to now no differences emerged comparing the tracks reconstructed from the hits using the two trigger times.

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Future development

- Analysis of the data taken from the test beam @ Trento with protons in March: resolution, space-time relations, efficiency, wire displacements etc., measured with external detector.
  These parameters will be included in the newgeom parfiles

- Legendre polynomy development for the preselection of the hits (only in bm_calibration, up to now)

- Refine the Chi2 reconstruction method

- Analysis of the GSI data, try to combine the VTX and BM?

- TABMactNtuMC updated with a TABMdigitizer