Simulating events with the Fieldmap

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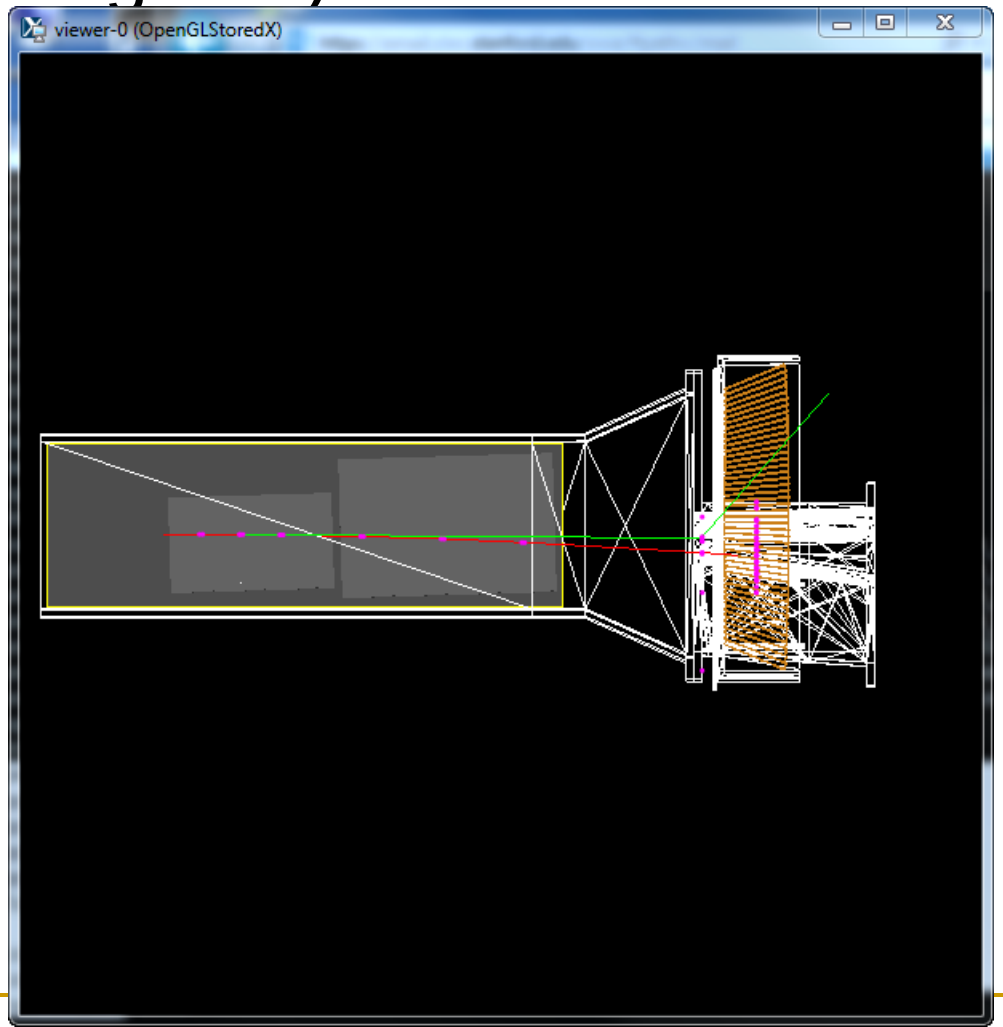
HPS-EngRun2015-Nominal-v3-fieldmap

- This detector makes the full 3D field map available to both slic and the reconstruction sofftware.
- Testing involved simulating the response to single, full-energy electrons and then reconstructing the output.
- Note that my tests used a current version of slic available at SLAC

slic Screen SHot

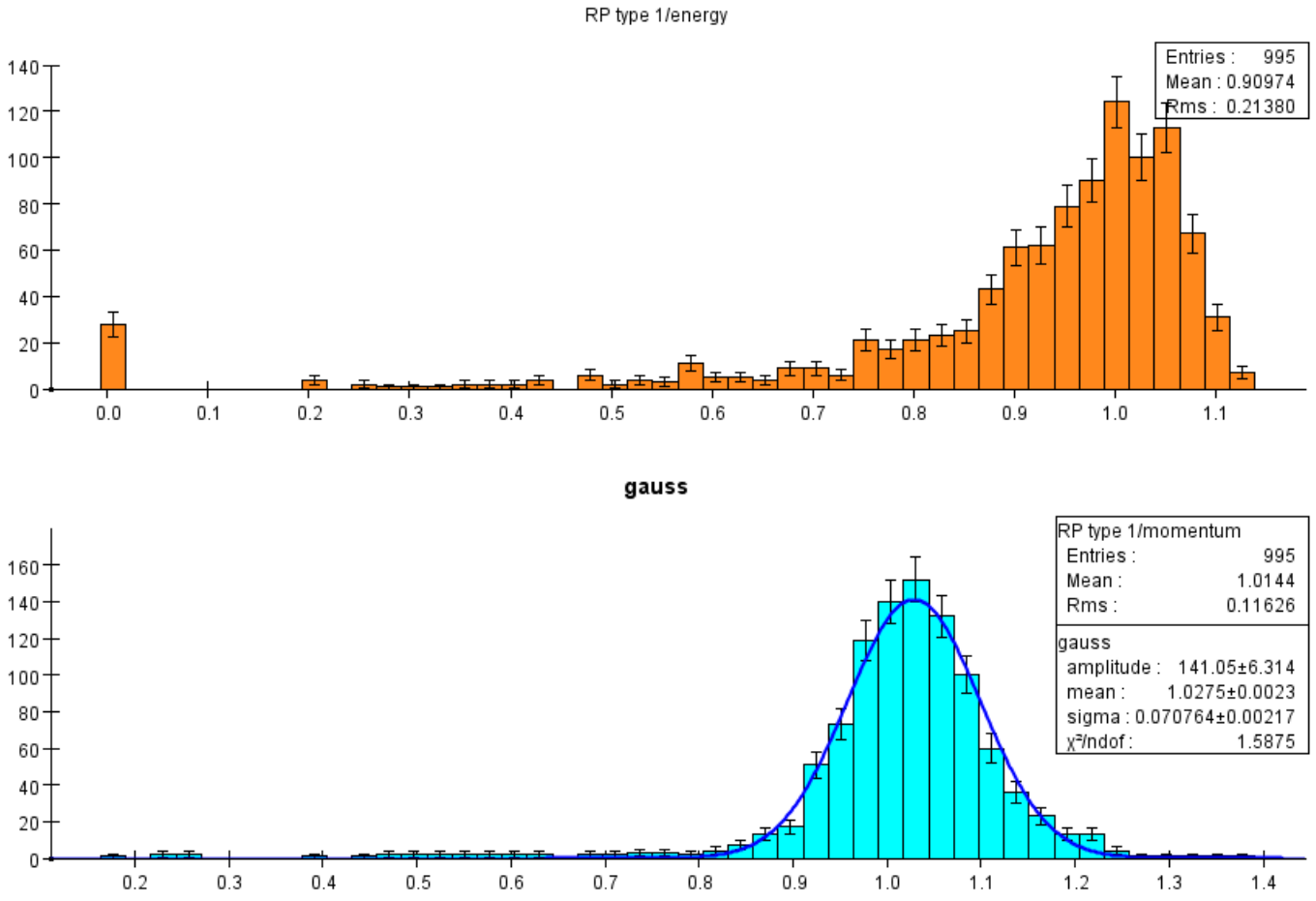
- Photon (green) ~ coaxial with z axis
- Electron (magenta) curves



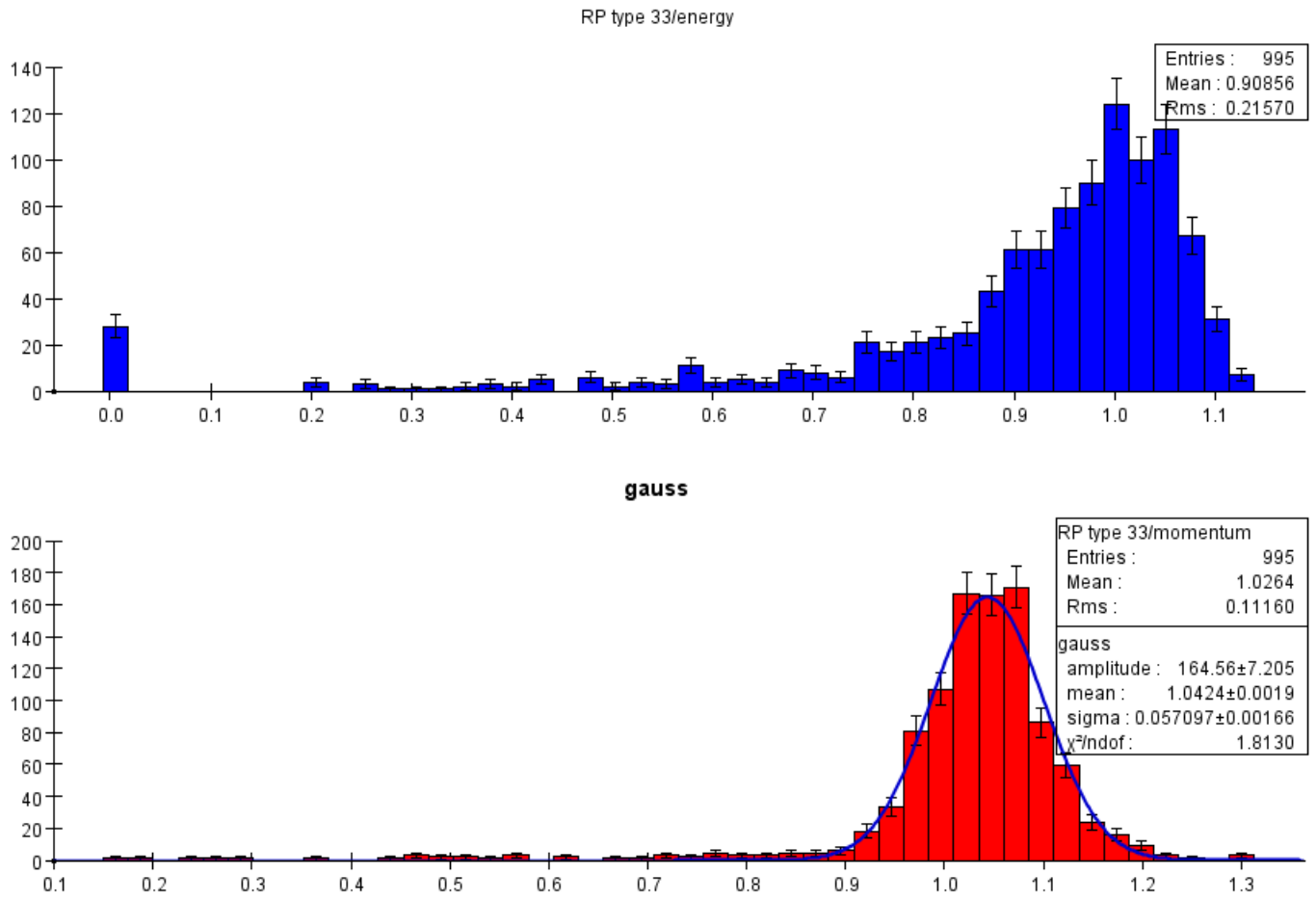
Reconstruction

- Standard MC reconstruction steering file is provided to reconstruct events with beam overlay
  - EngineeringRun2015FullReconMC_Pass2.lcsim
- Sho has put together a full steering file appropriate for use with single particles
  - HPSReconNoReadout.lcsim
- Used this to reconstruct the single fee MC sample

Track Reconstruction HTF



Track Reconstruction GBL



Summary

- The simulation & reconstruction chain appears to be working well using the HPS-EngRun2015-Nominal-v3-fieldmap detector
- Need to repeat this exercise using the production version of slic at JLab to understand why the recent MC production was buggy.
- For the collaboration meeting should proceed with existing tools using HPS-EngRun2015-Nominal-v? detector without field map
- Will need to update slic in any case, so should start the transition soon.