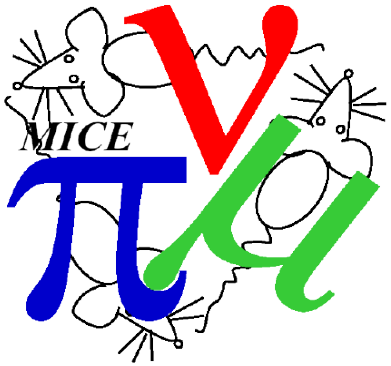
Global Track Fit



C. Rogers,
ASTeC Intense Beams Group
Rutherford Appleton Laboratory

ASTeC

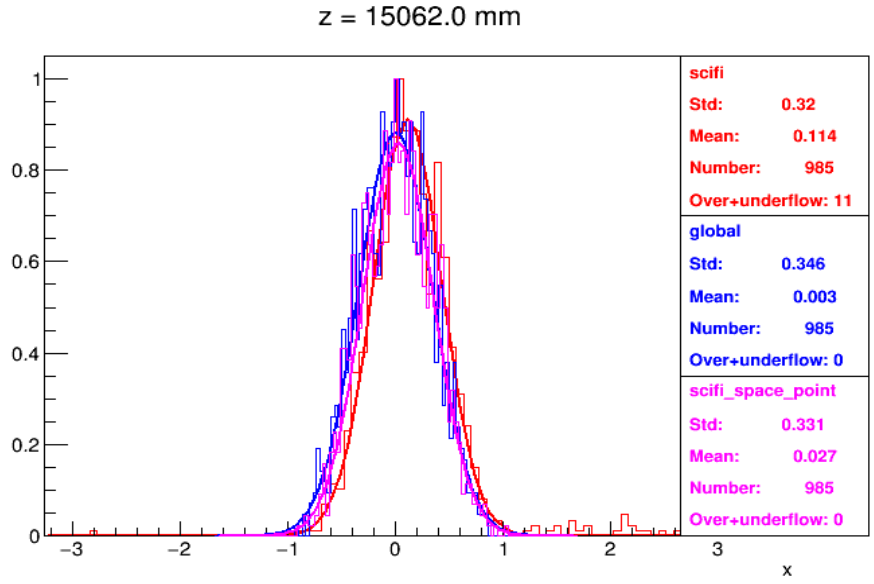
Global Track Fit

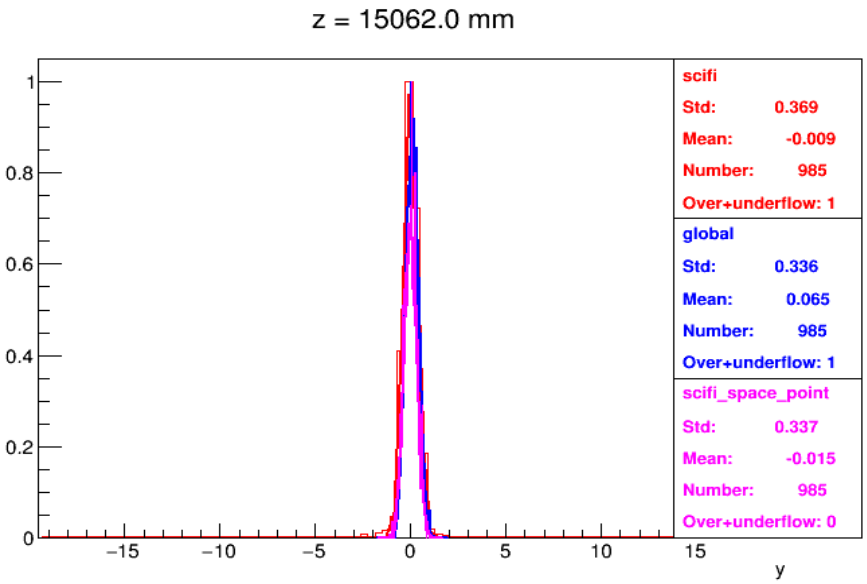
- Looking at track fit residuals for scifi and global
  - Overall residual
  - Bias from misalignment
- MC Study only pending recon in 2.5.0
  - Bug in scifi alignment software for version < 2.5.0
- First we use uniform 4T field in MC and recon
- Then we use the 07469 OPERA field map (incl PRY)
- Then tilt 07469 map
  - Run MC with rotation *(-0.0458+θ_x , 0.0196+θ_y , 0) degree*
  - Run recon with rotation *(-0.0458+θ_x , 0.0196+θ_y , 0) degree*
- Have not yet looked at current (mispowering)

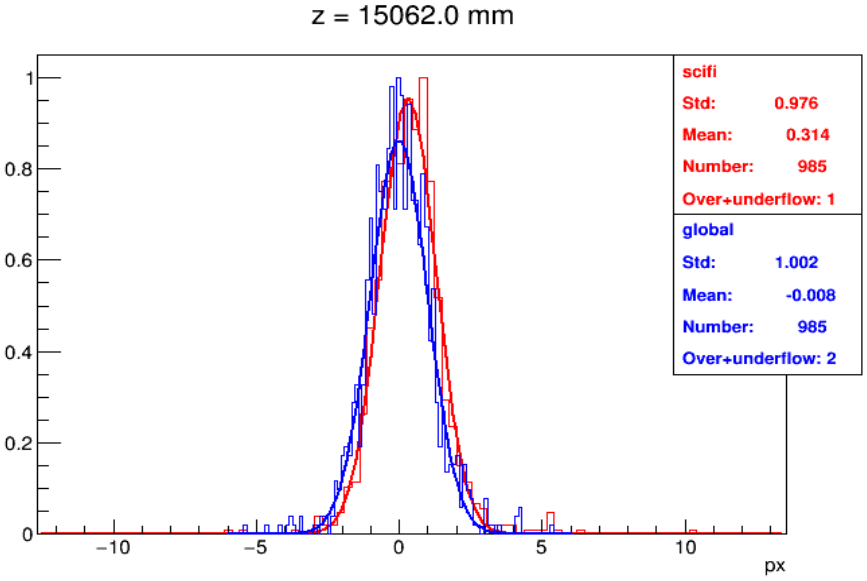
Resolutions

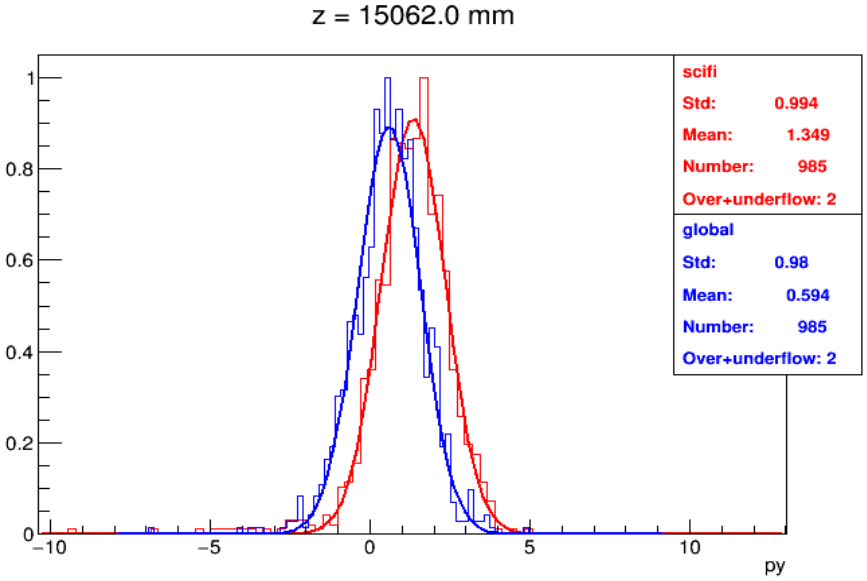
- Looking at track fit MC truth - recon for scifi and global
  - Overall resolution
  - Bias from misalignment
- MC Study only pending recon in MAUS v2.5.0
  - Bug in scifi alignment software for version < 2.5.0
- First we use uniform 4T field in MC and recon
- Then we use the 07469 OPERA field map (incl PRY)
- Then tilt 07469 map
  - Run MC with rotation *(-0.0458+θ_x , 0.0196+θ_y , 0) degree*
  - Run recon with rotation *(-0.0458+θ_x , 0.0196+θ_y , 0) degree*
- Then mispower 07469 map
  - Run MC with scale J
  - Run recon with scale factor 1
- Have not yet looked at misalignment – but don't expect any sensitivity from this study

4T uniform field

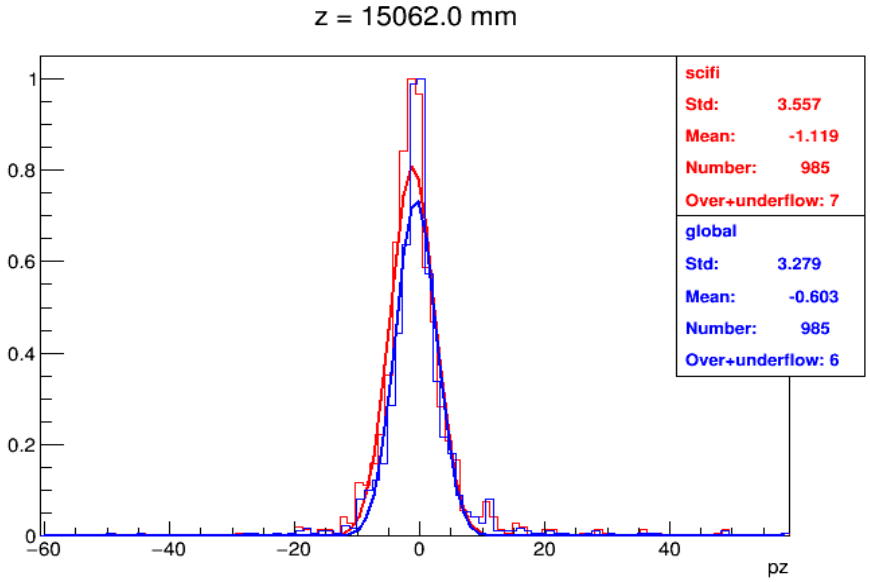




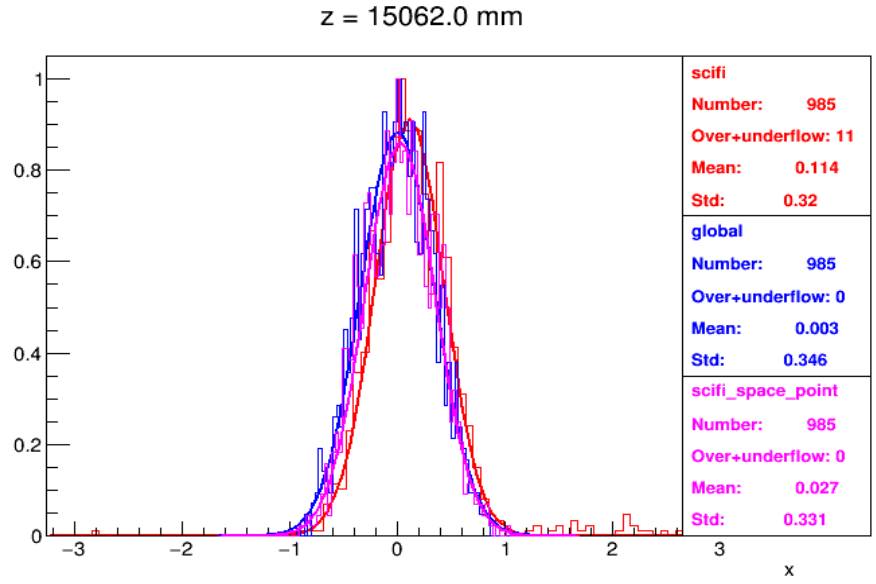


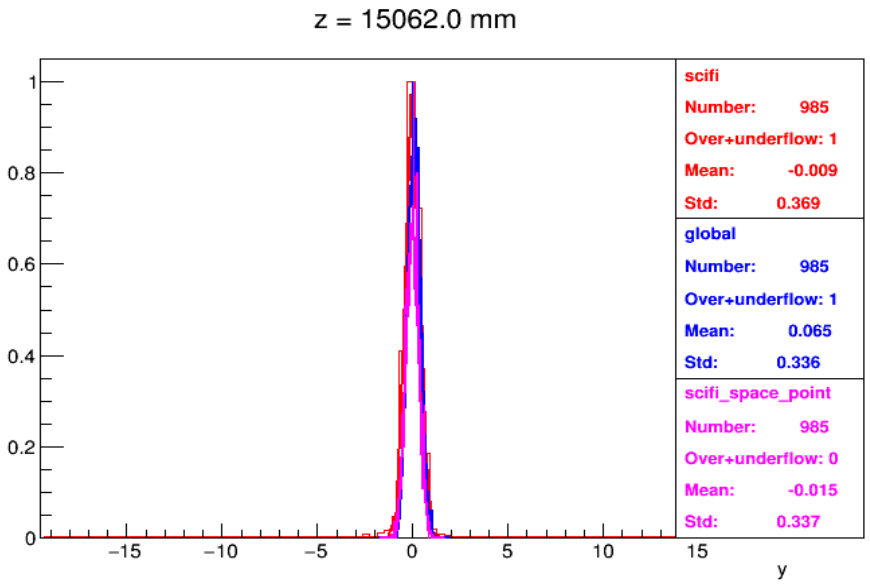


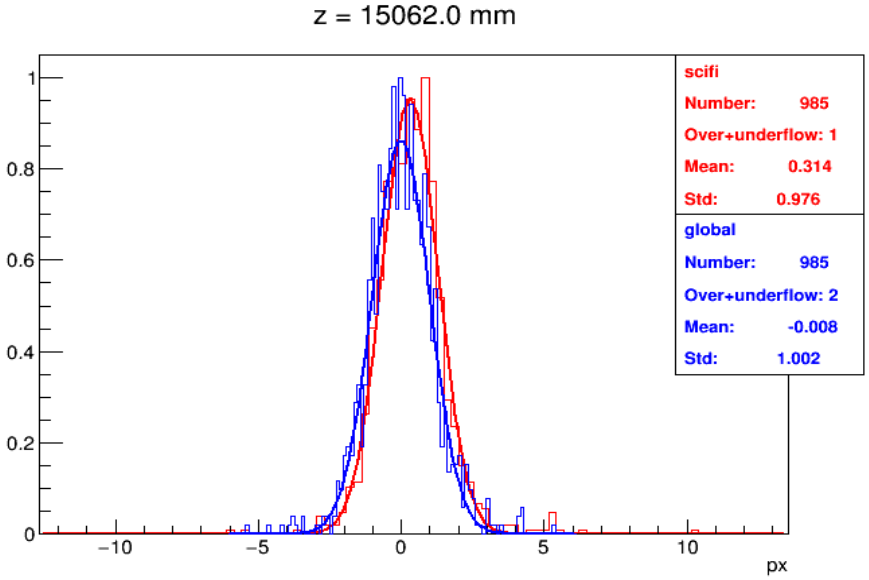
4T uniform field (2)

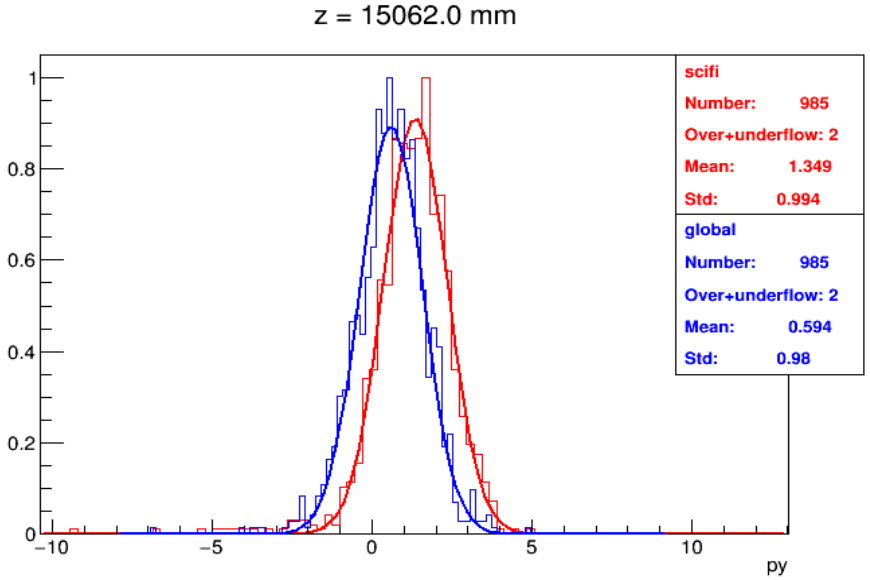


OPERA field map

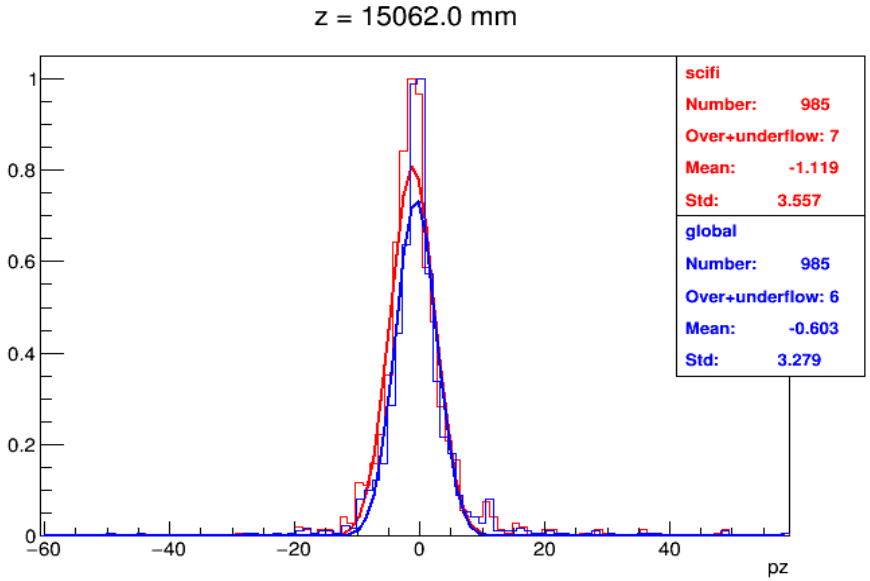




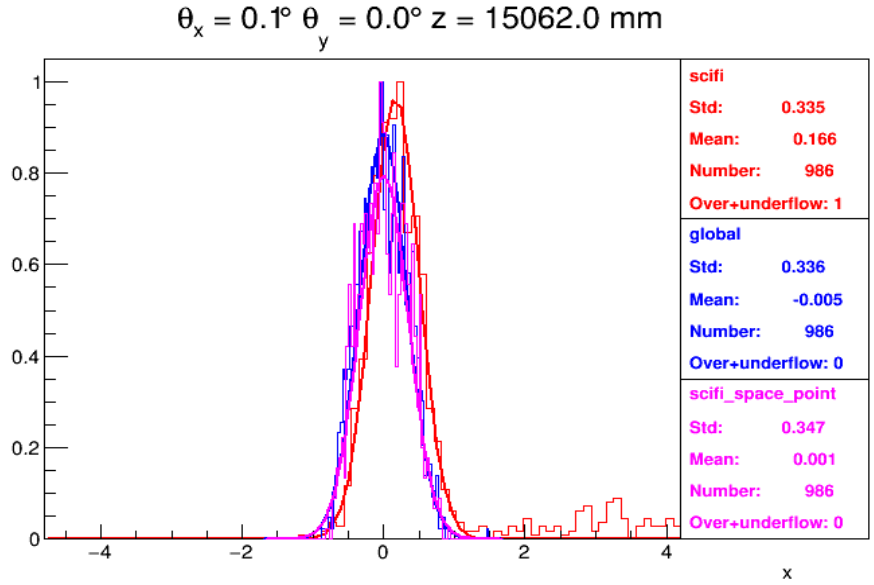


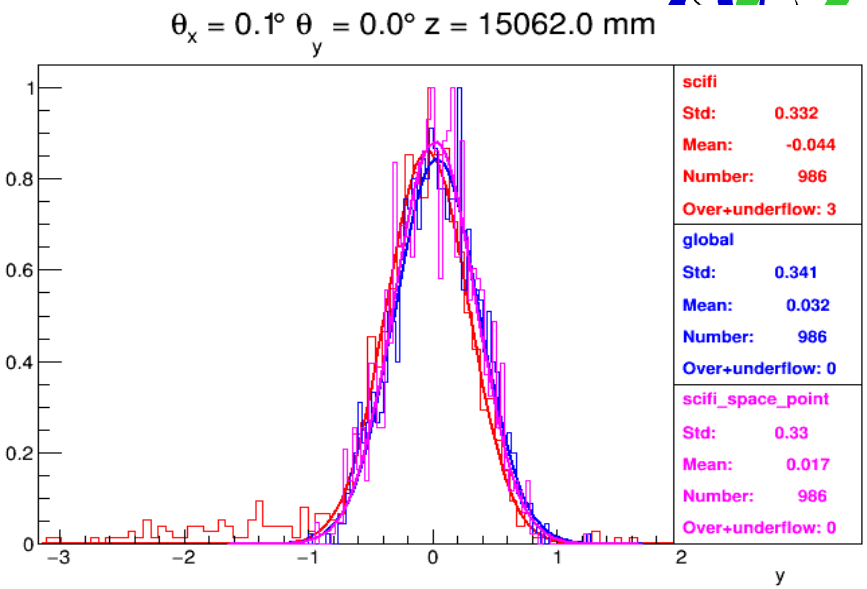


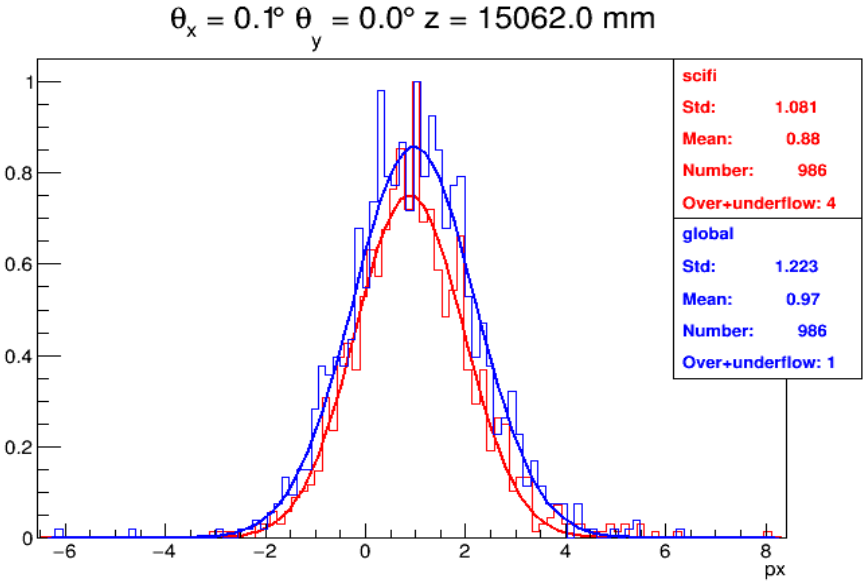
4T uniform field (2)

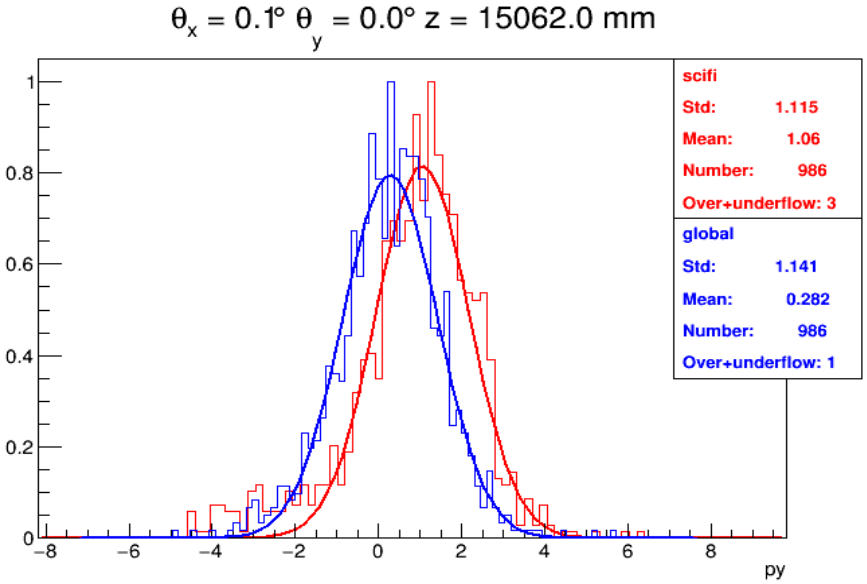


OPERA field map 0.1° Tilt

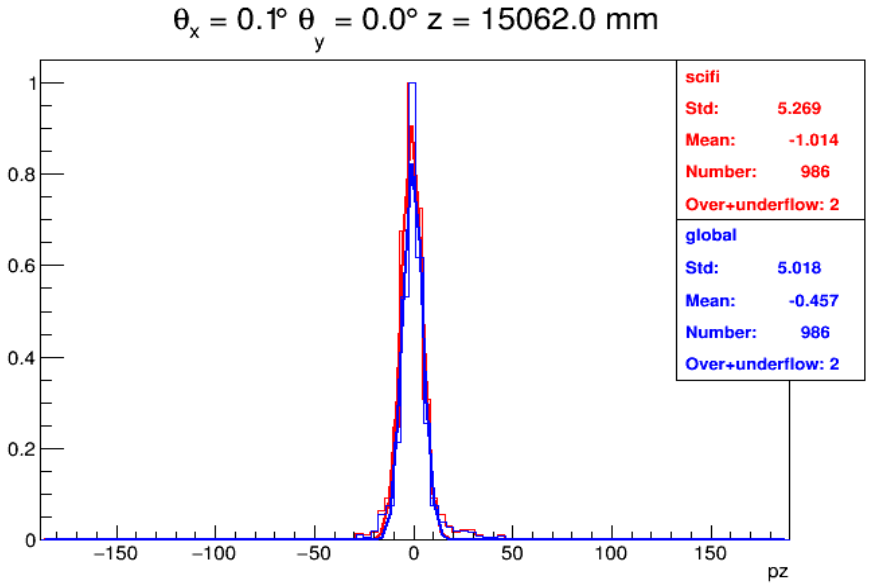




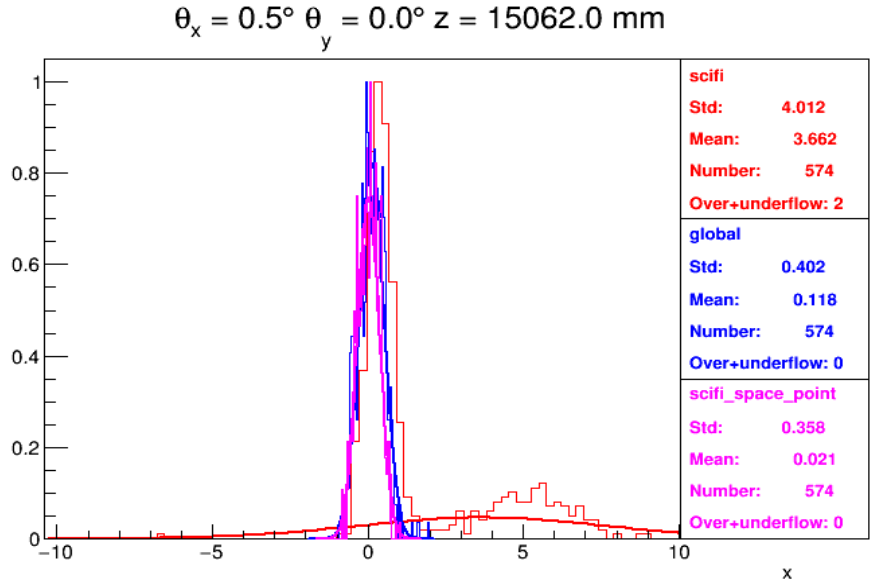


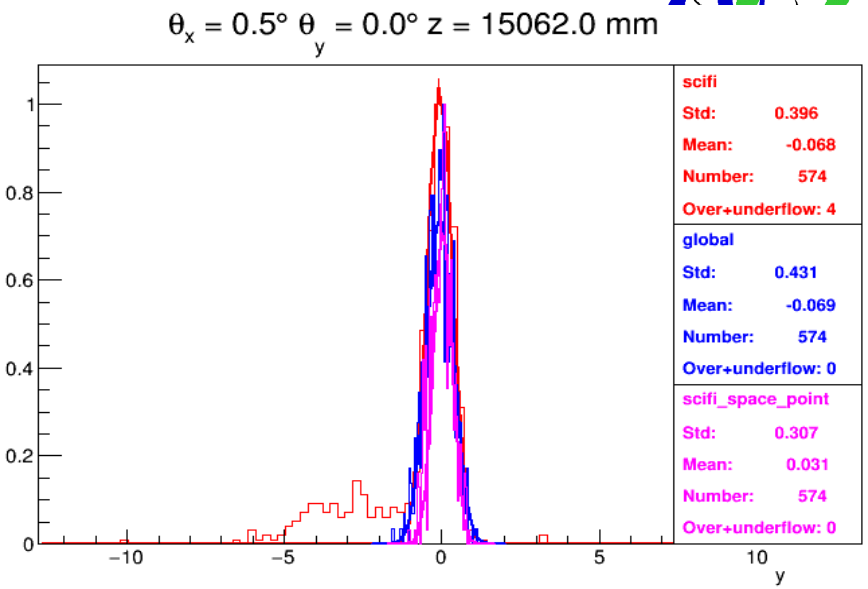


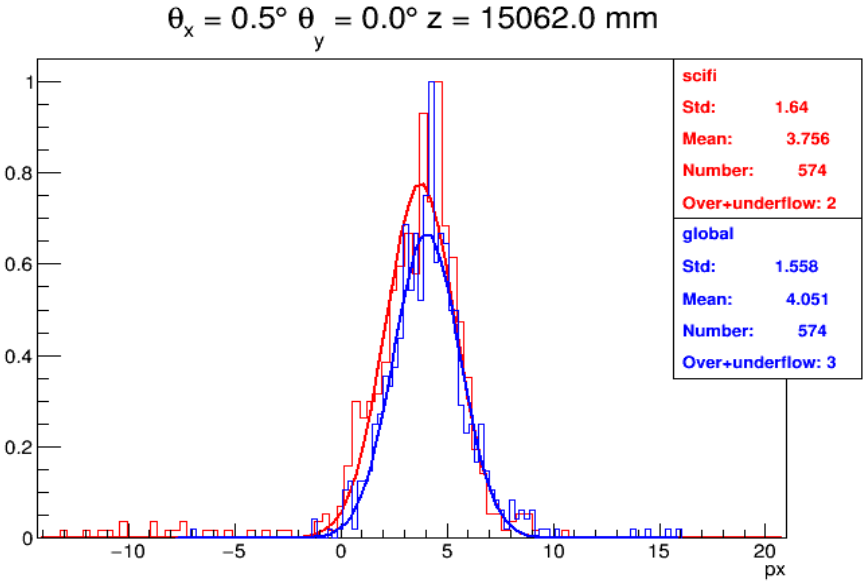
OPERA field map 0.1° Tilt (2)

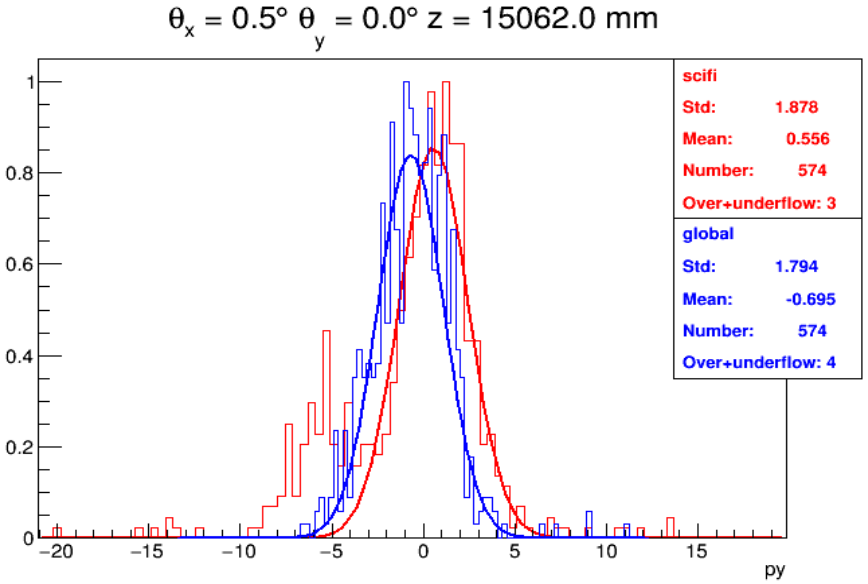


OPERA field map 0.5° Tilt

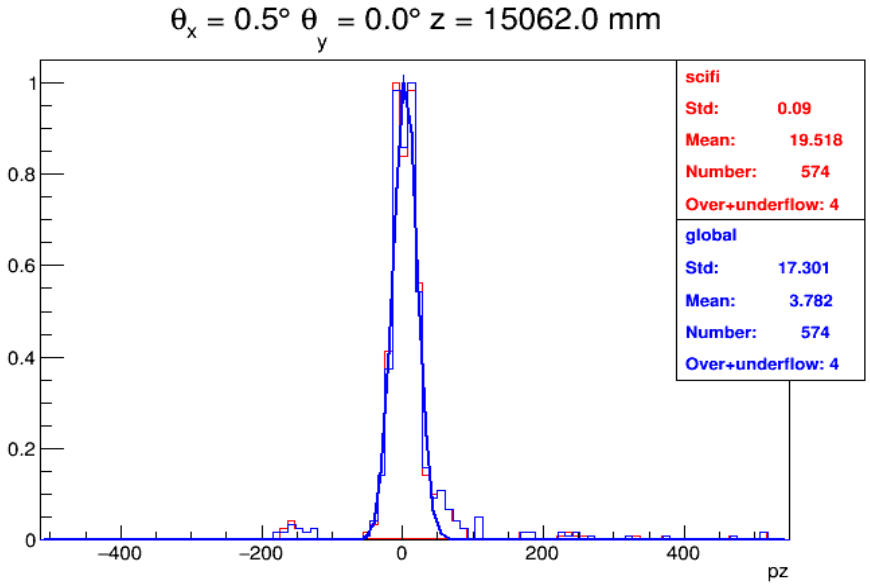








OPERA field map 0.5° Tilt (2)



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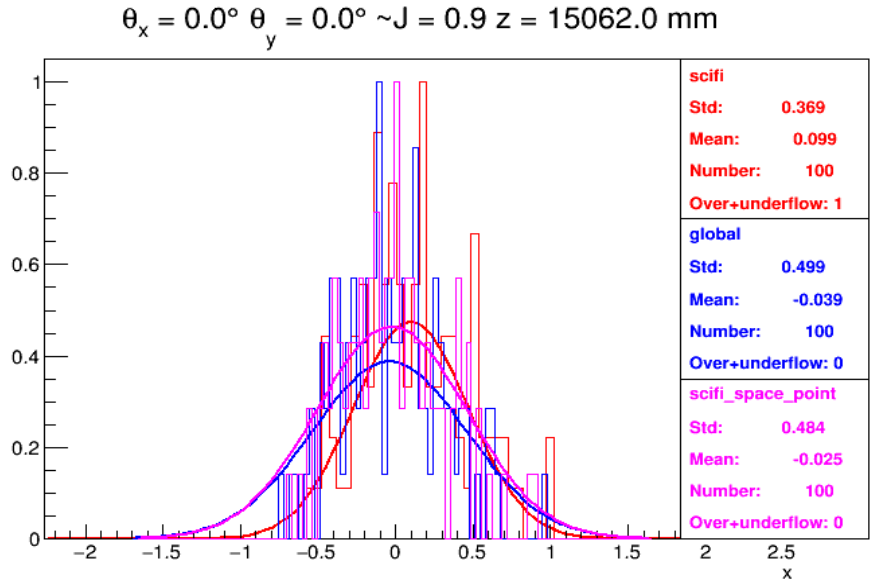

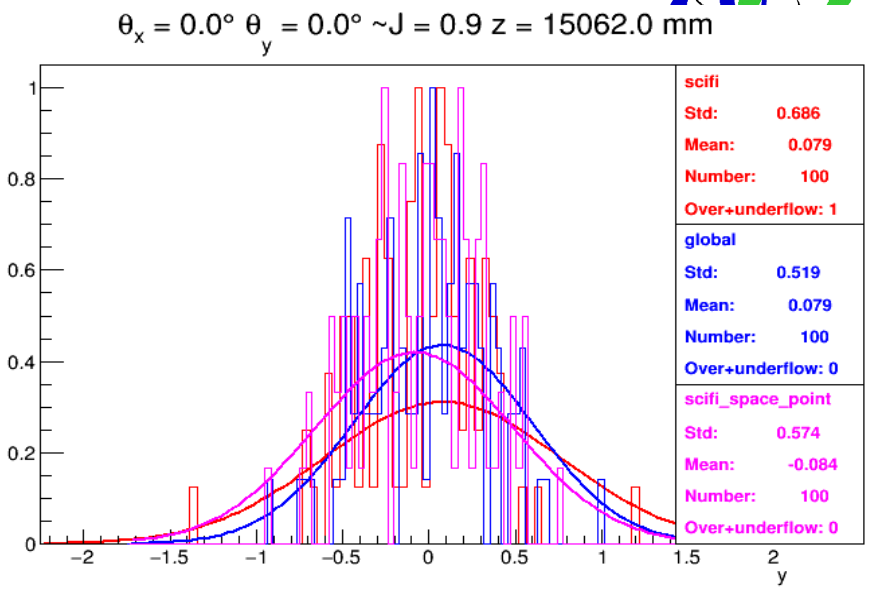

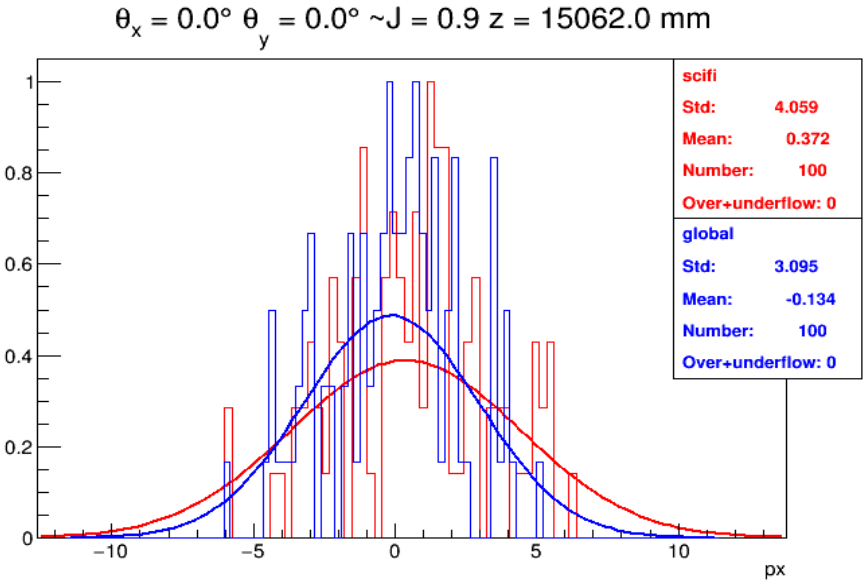

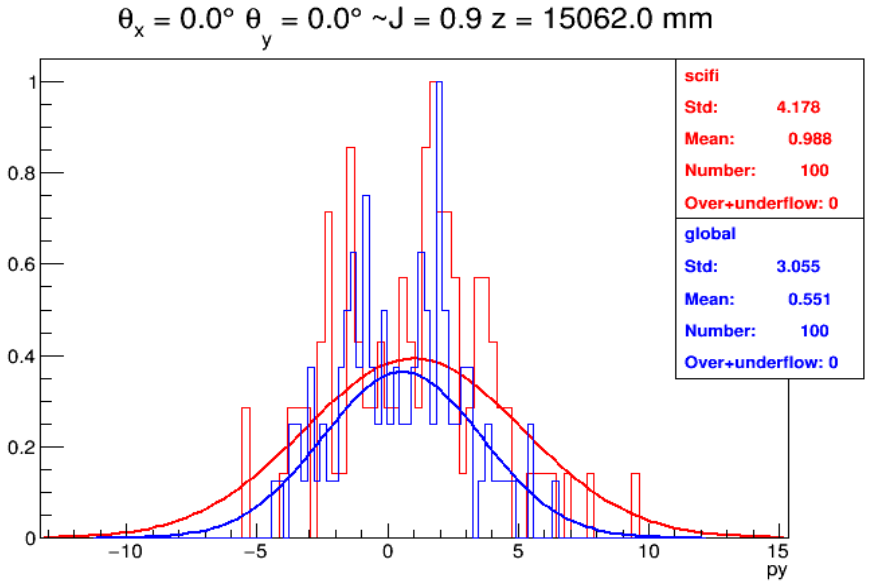

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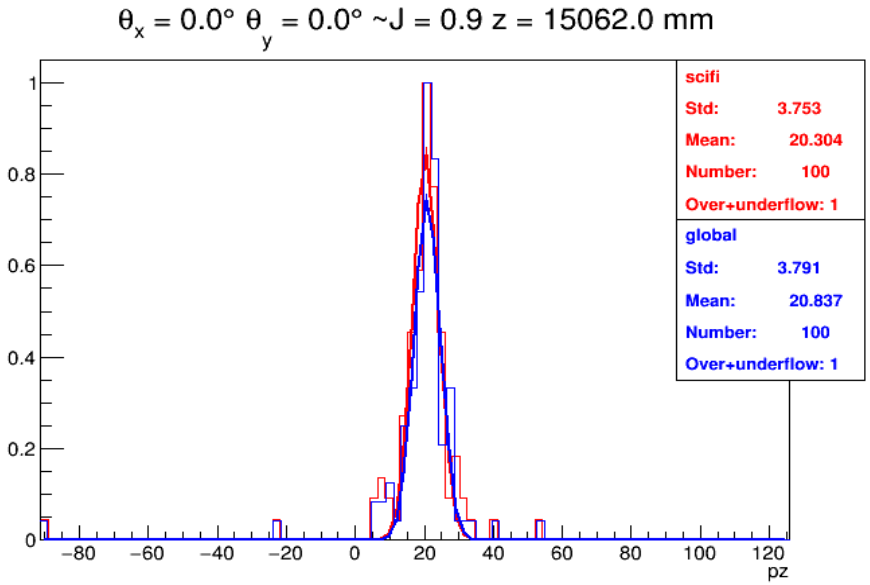

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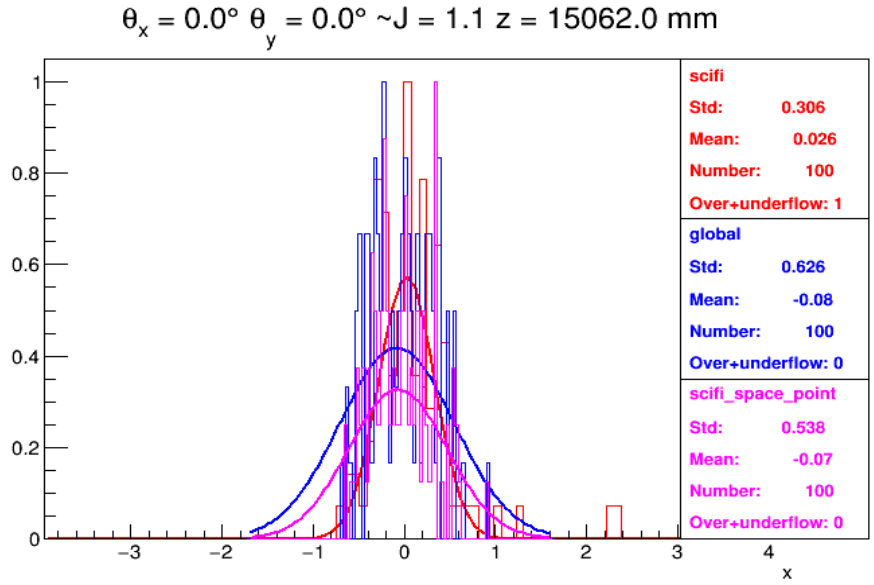

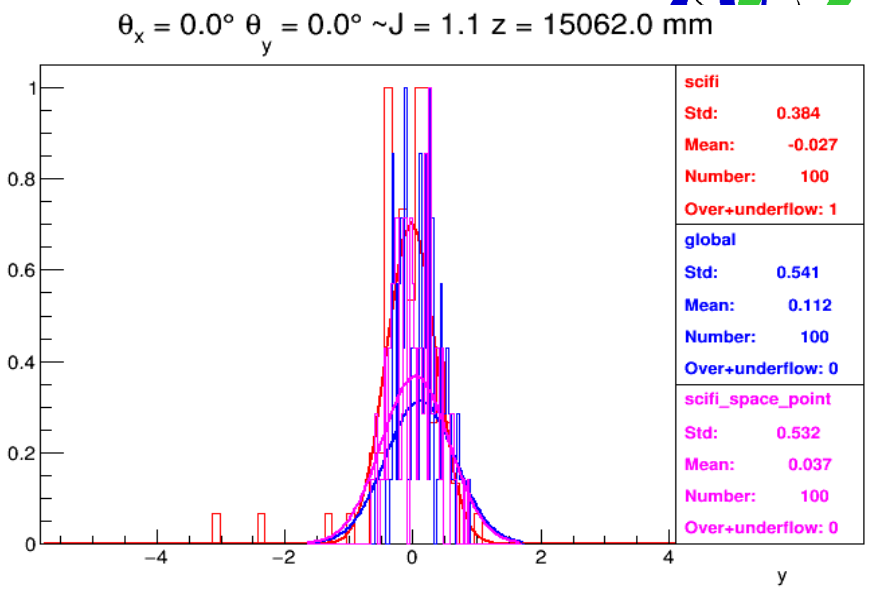

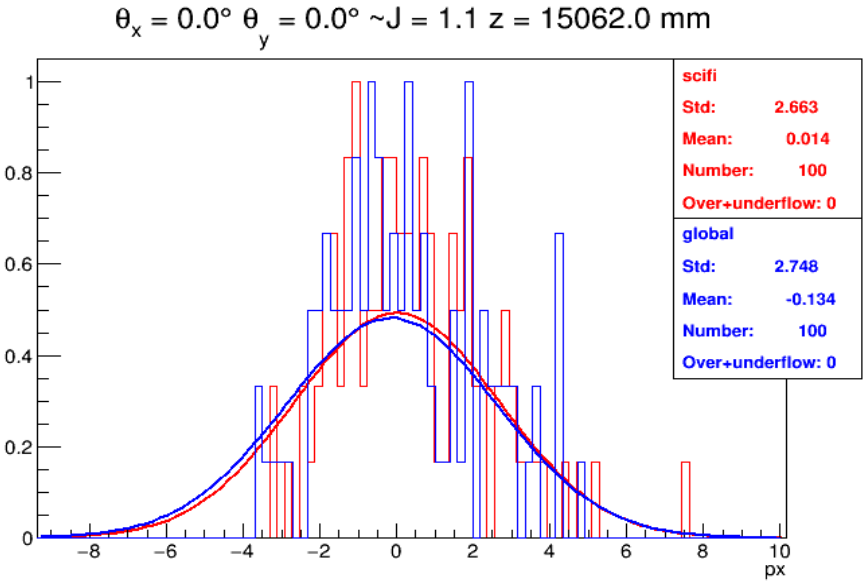

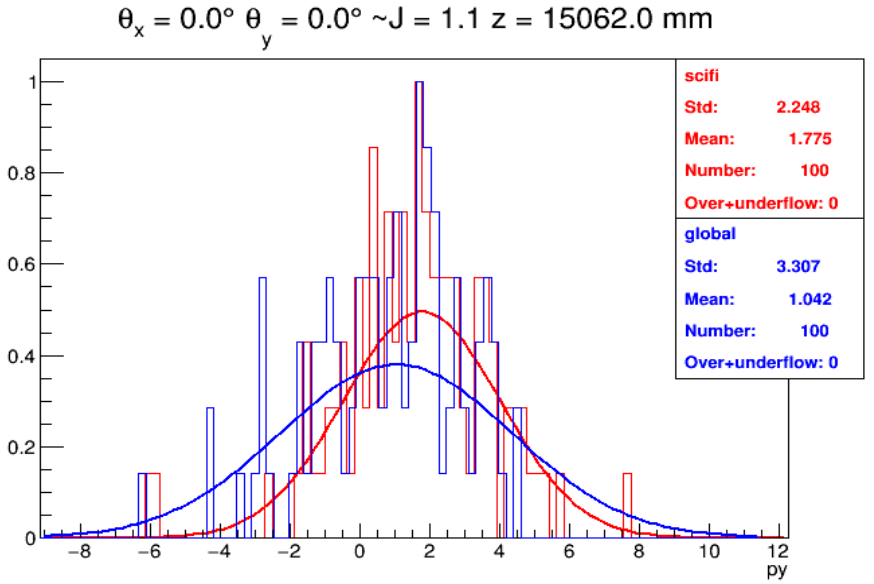
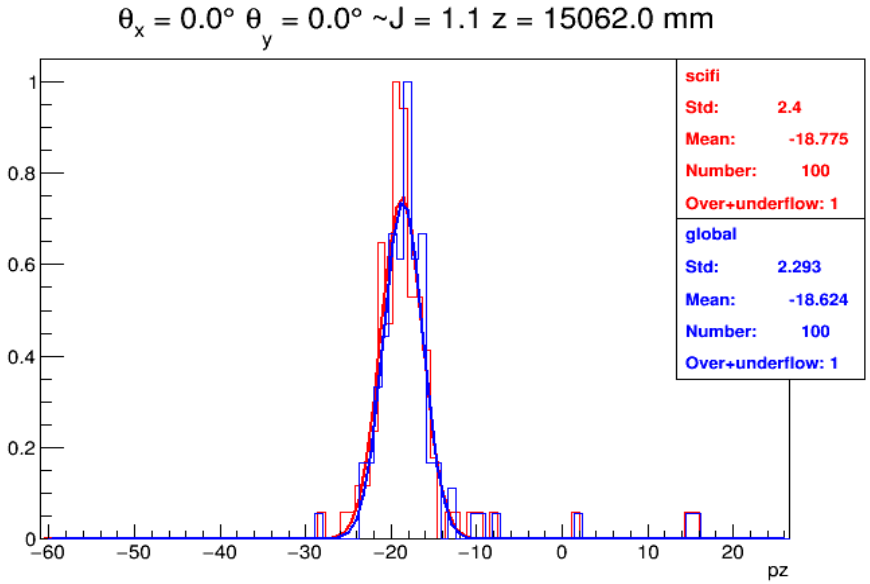
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