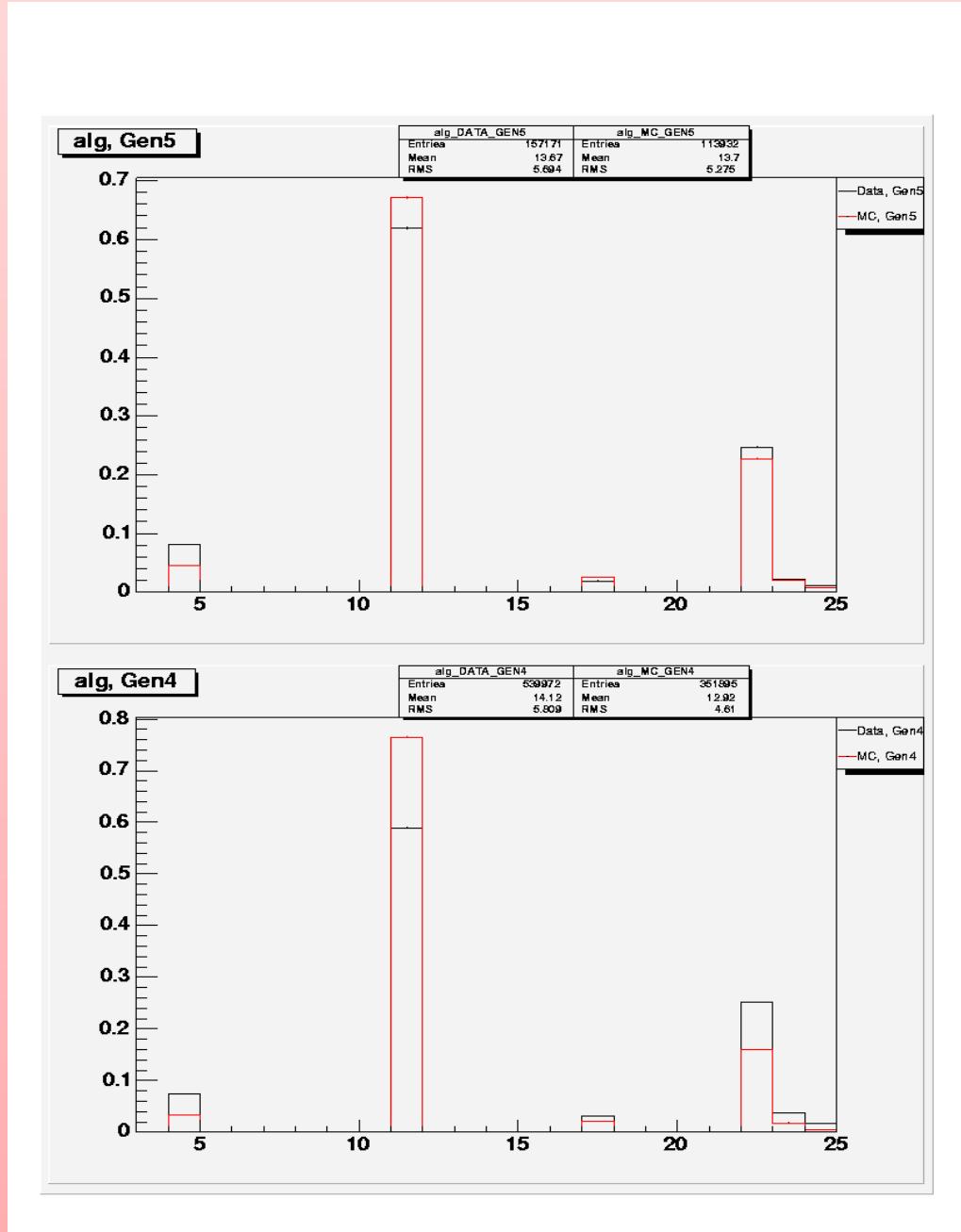


Simulation checks in 5.3.1pre2

Salvatore Rappoccio, Joao Guimaraes

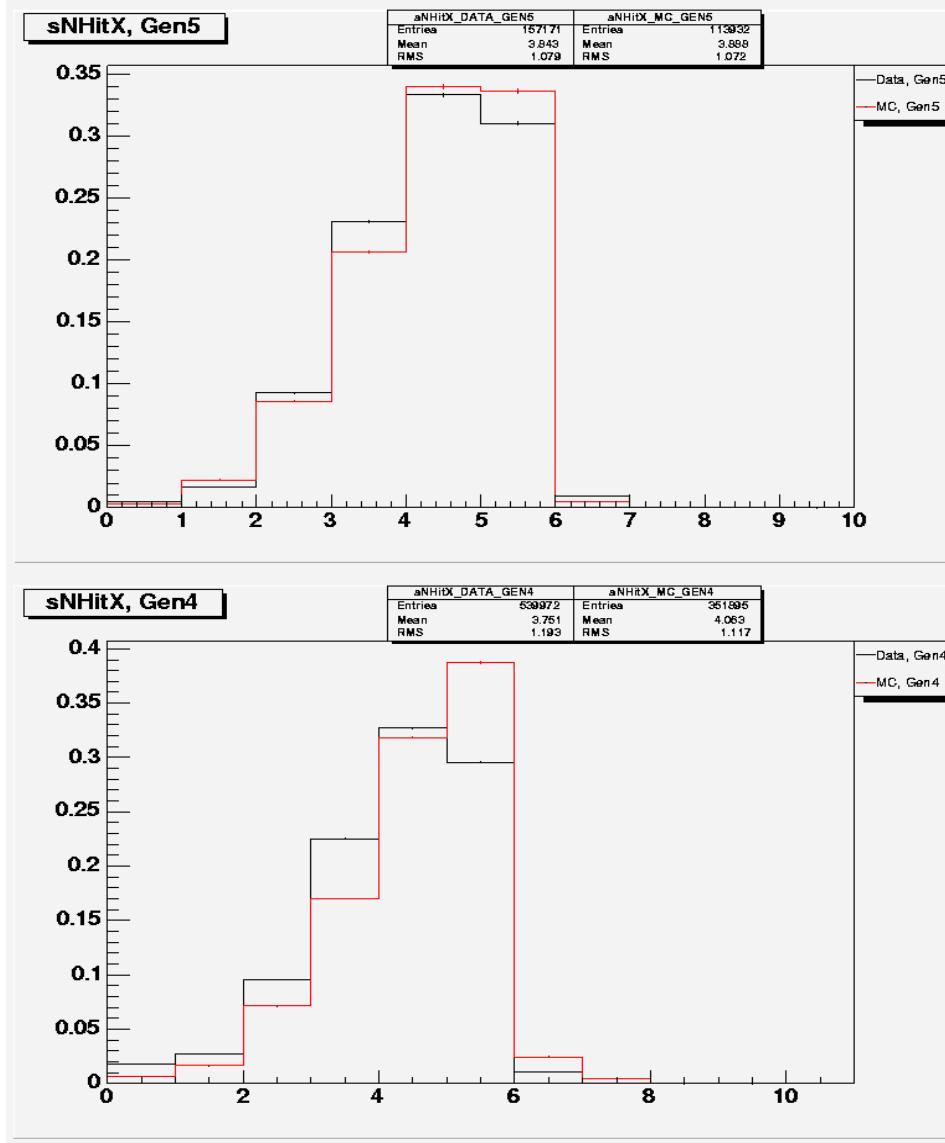
- Comparing Jet50 validation samples in 5.3.1pre2
 - Gen 5 ==> 5.3.1pre2 offline
 - Gen 4
 - Simulated with 4.9.1
 - “Reconstructed” and 4.11.2
 - Remake track refit and calorimetry
 - Official Top group MC processing
 - MC is in red
 - Data is in black

Track Algorithms

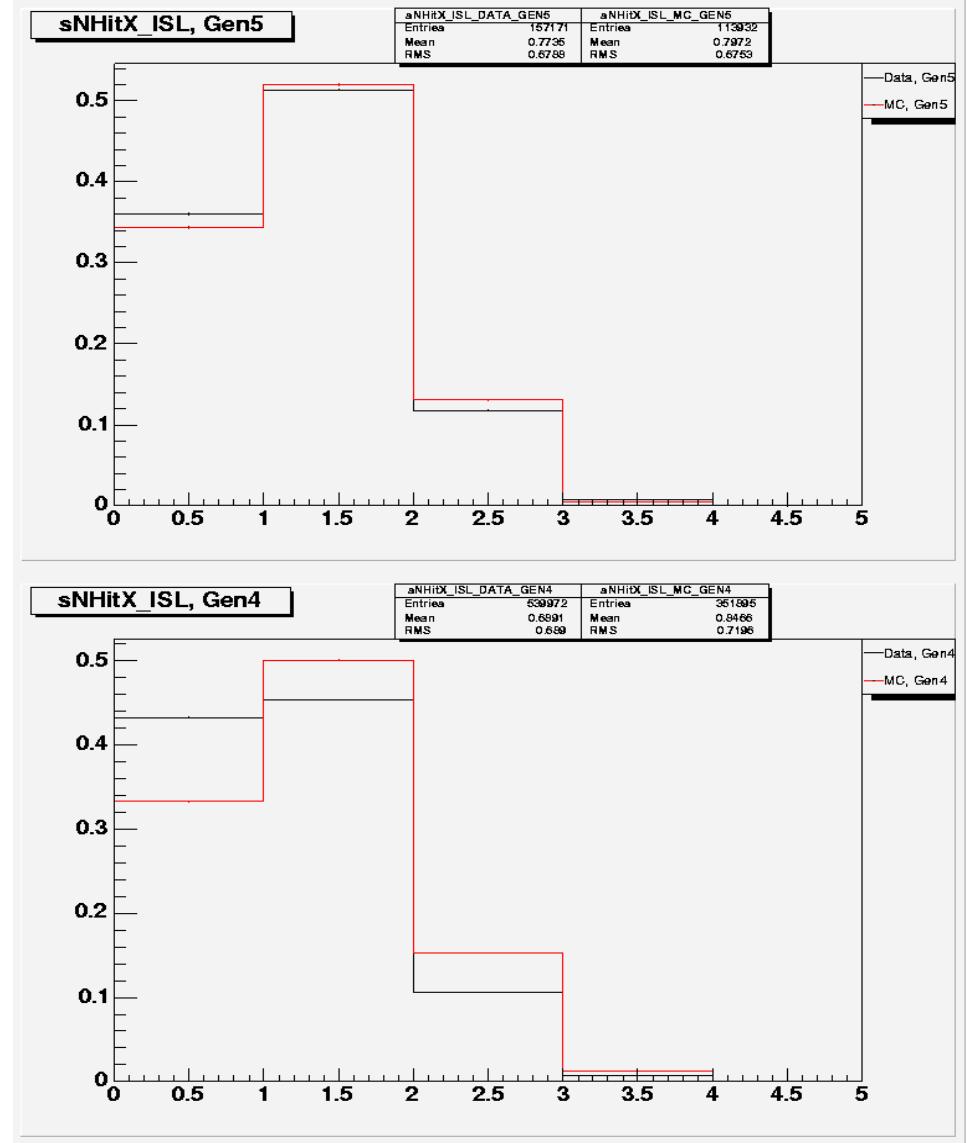


Number of axial silicon hits

SVX

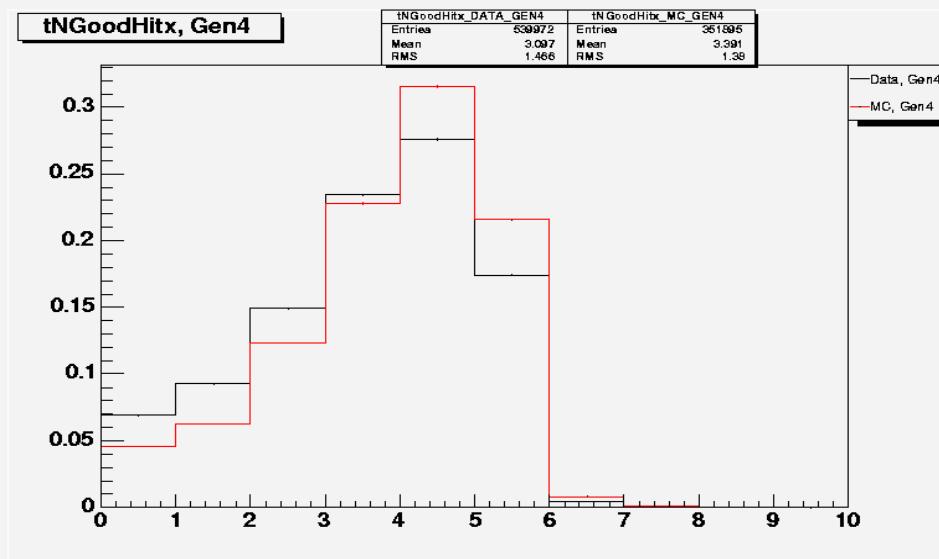
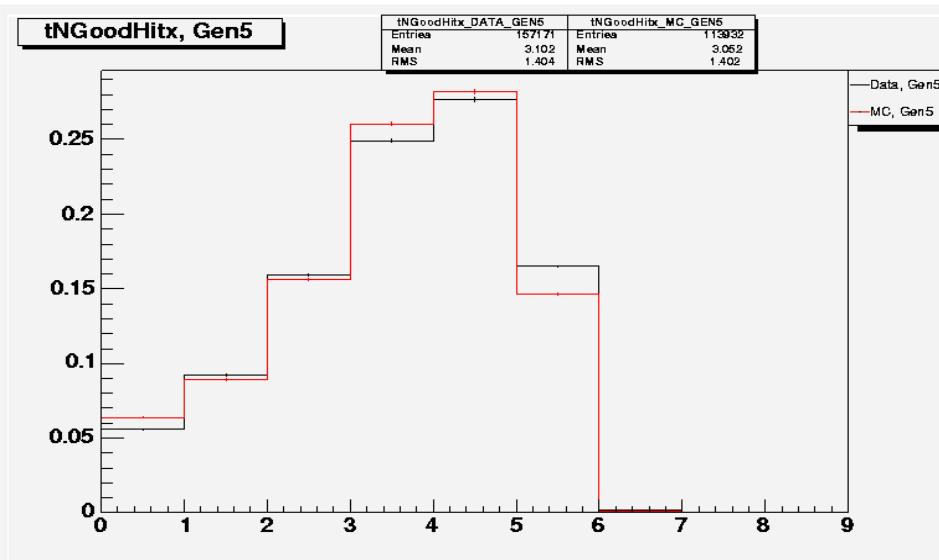


ISL

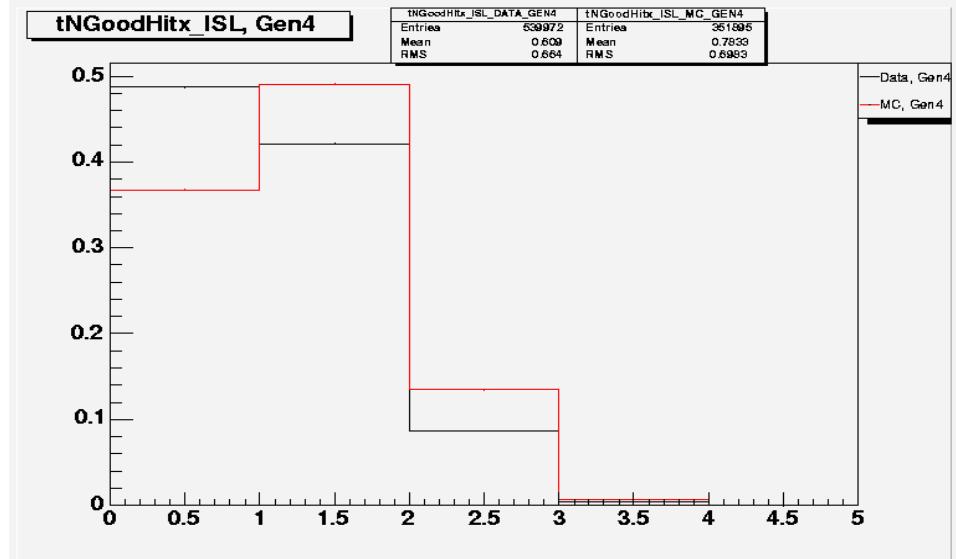
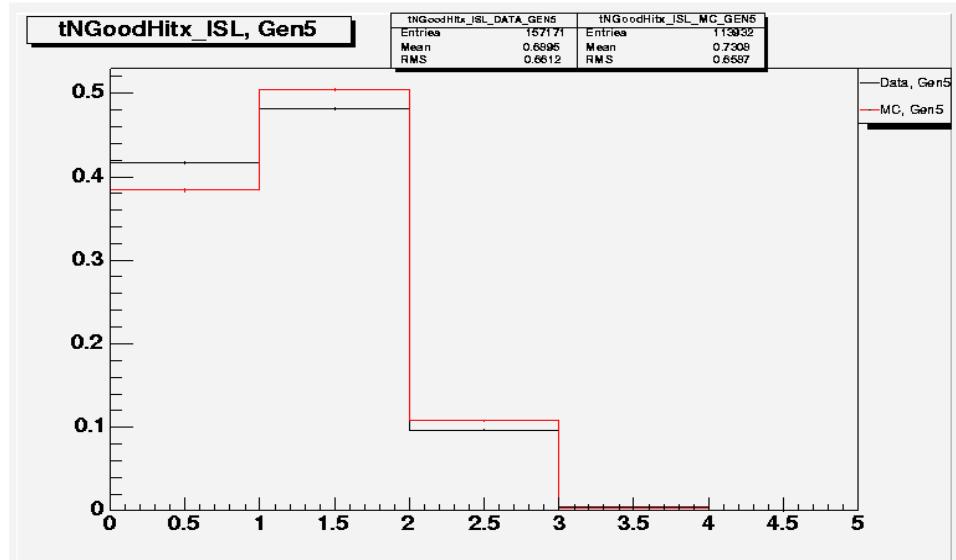


Number of good axial silicon hits

SVX

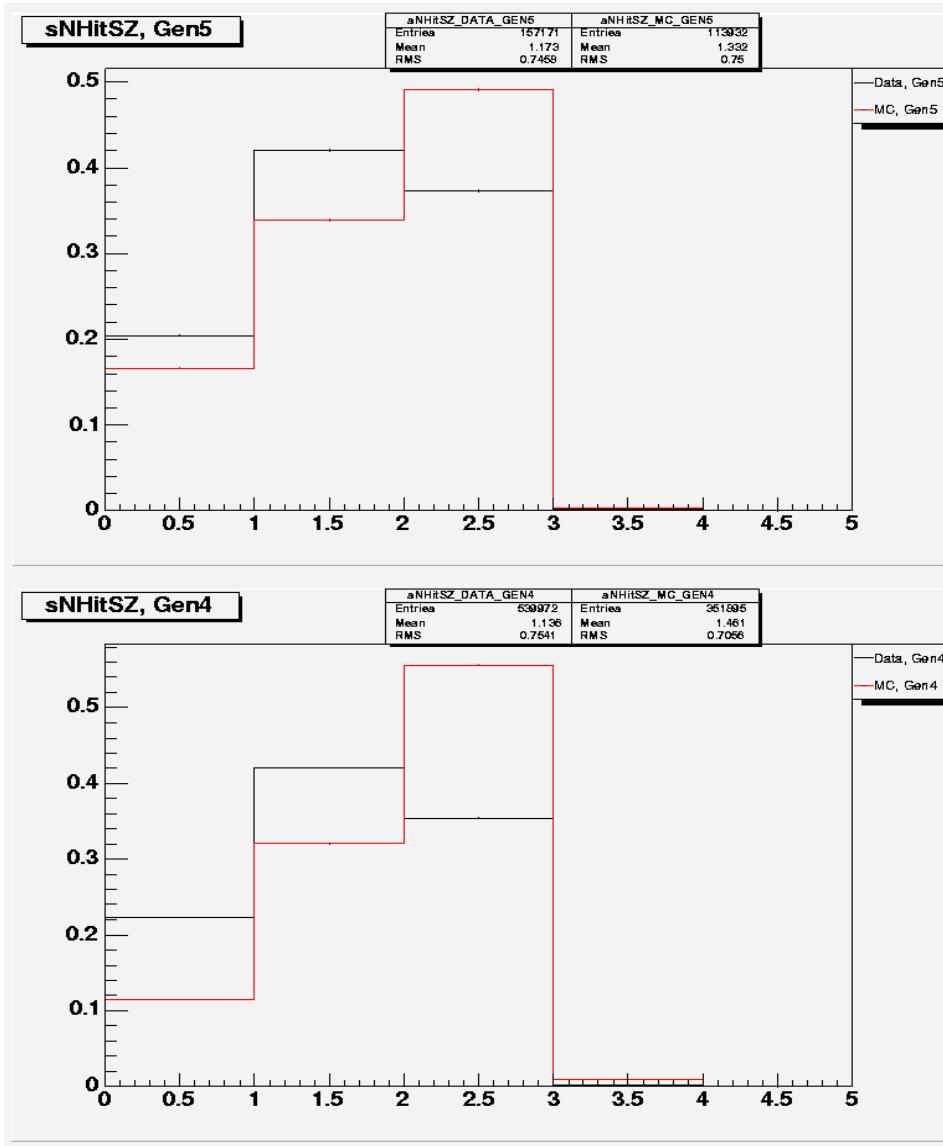


ISL

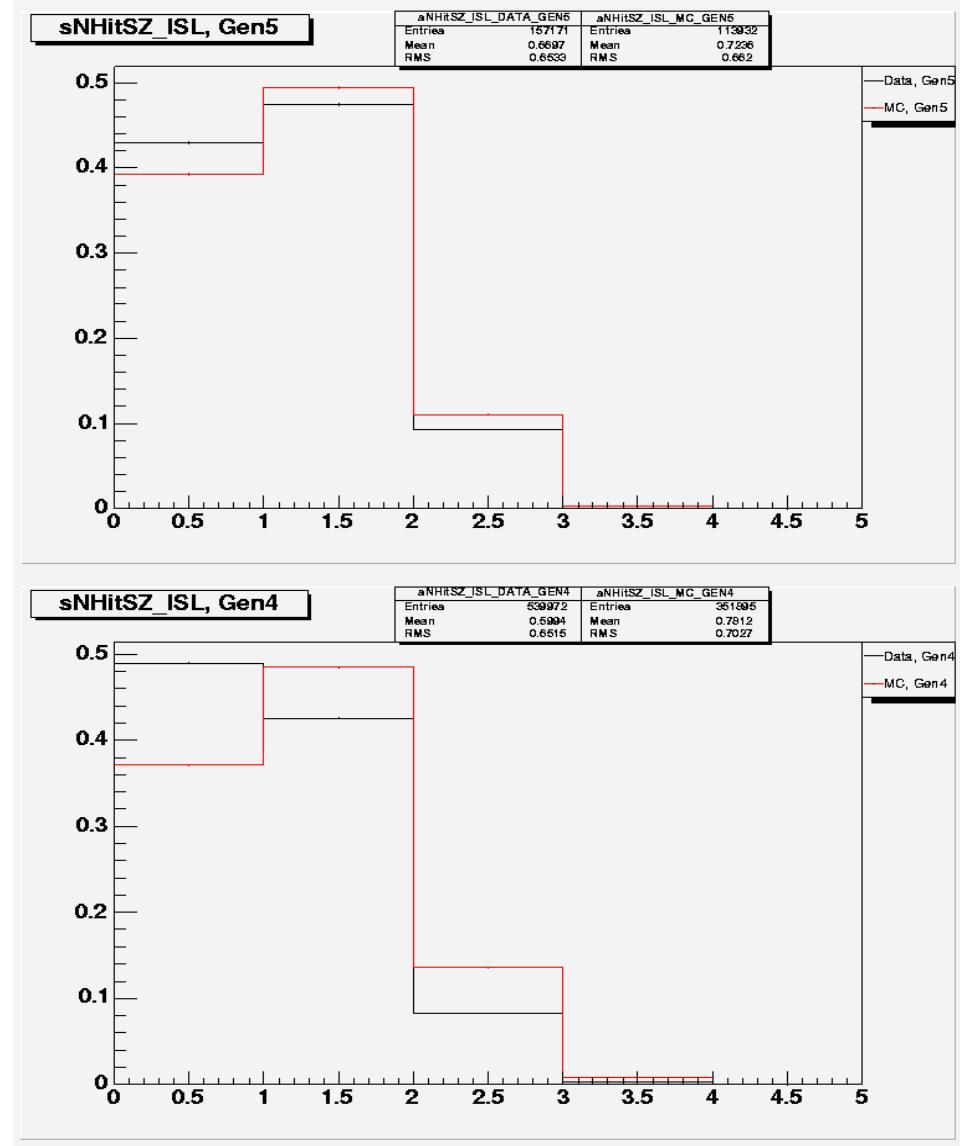


Number of stereo silicon hits

SVX

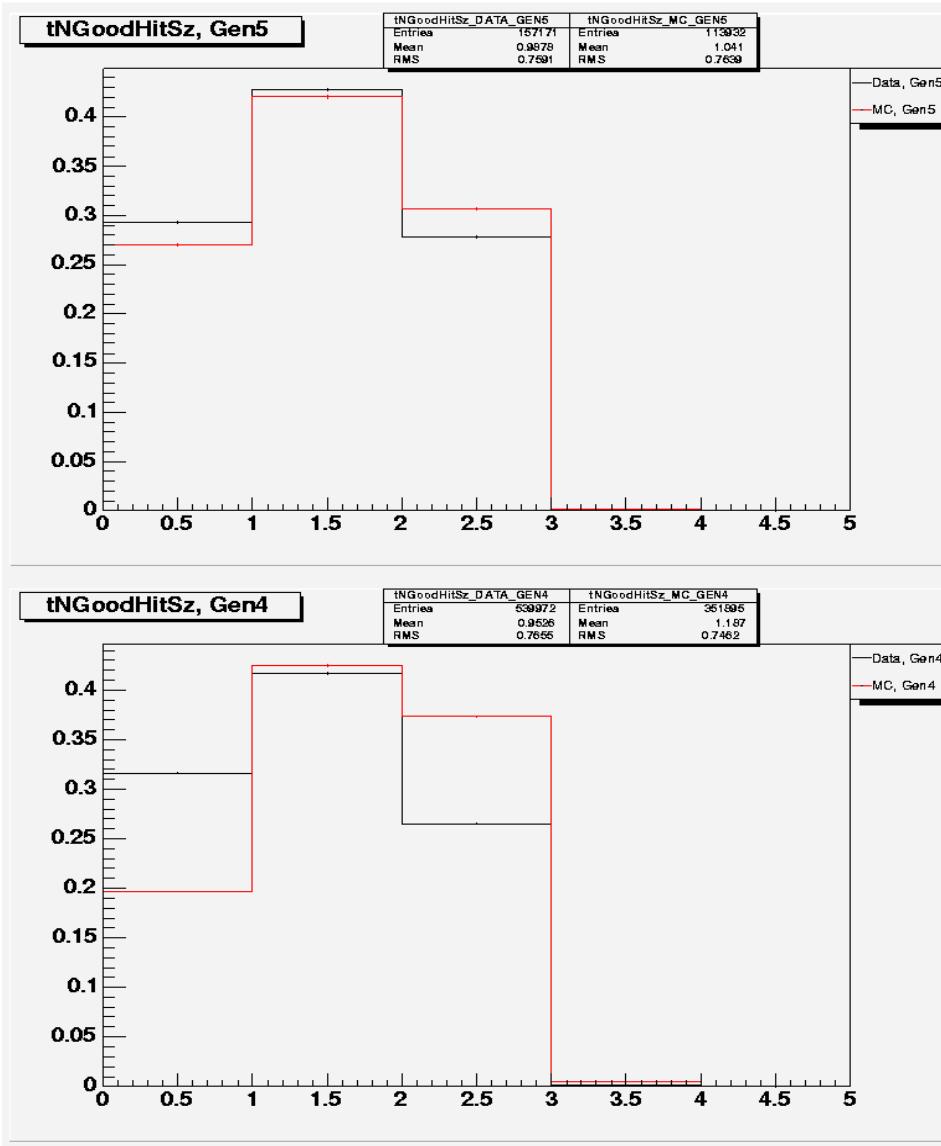


ISL

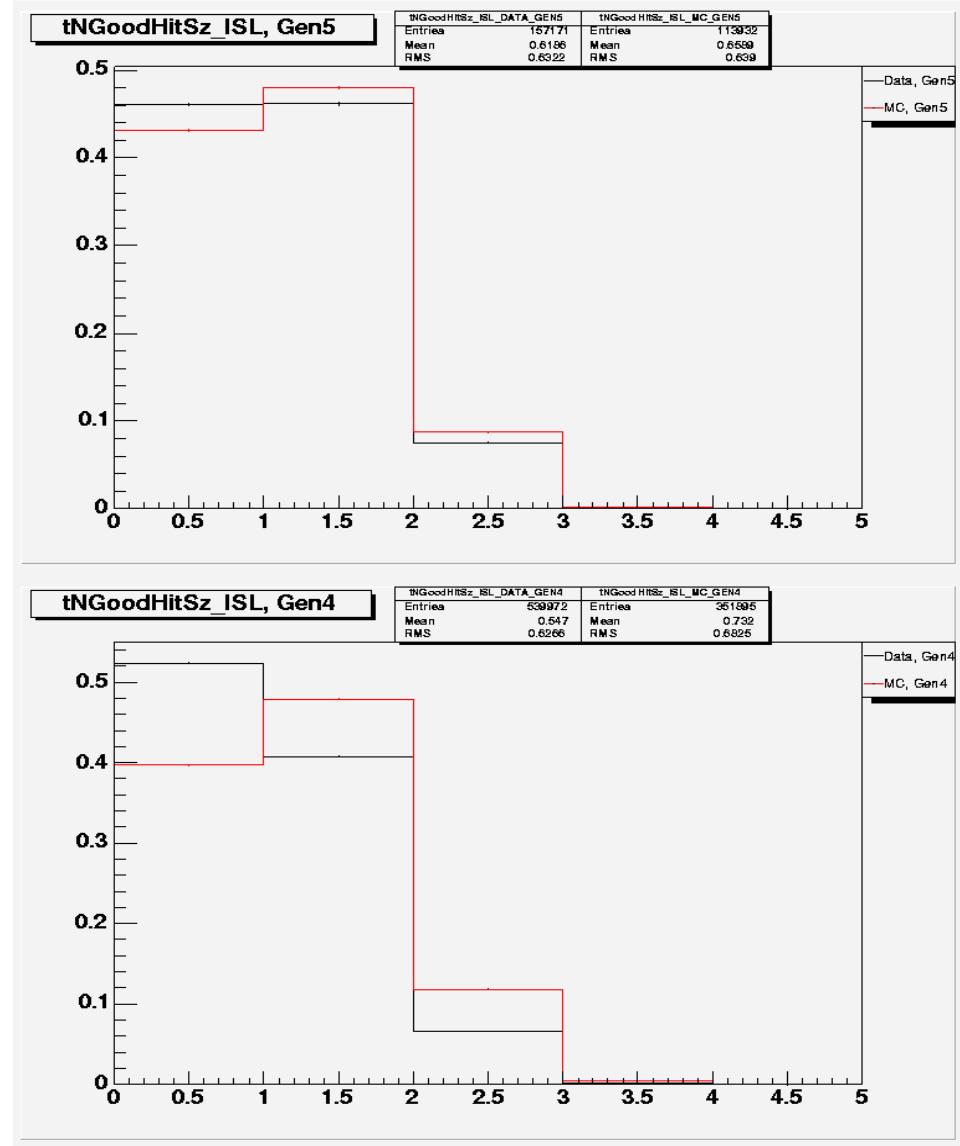


Number of good stereo silicon hits

SVX

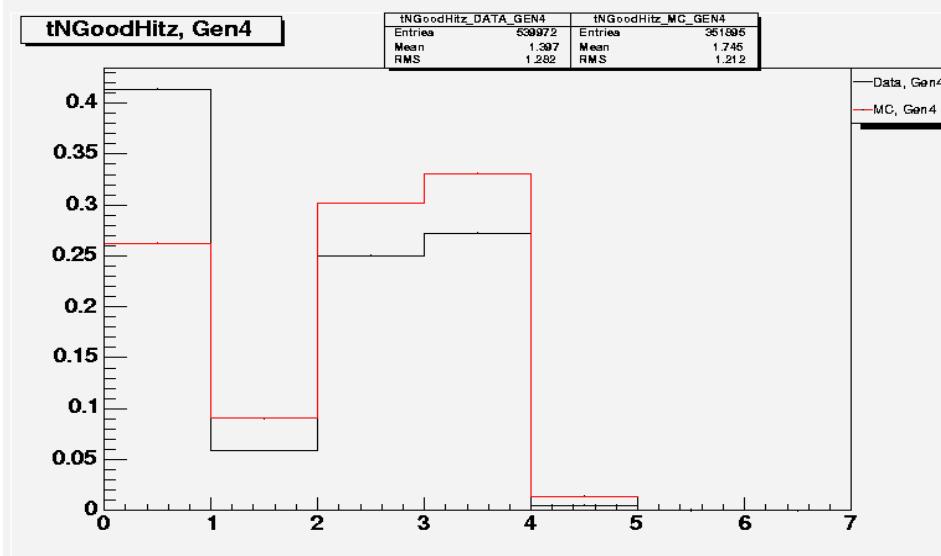
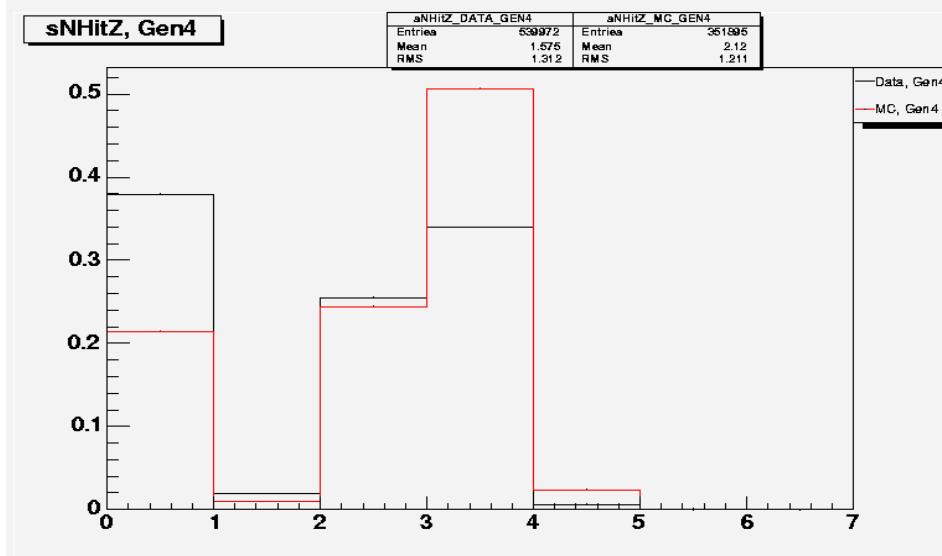
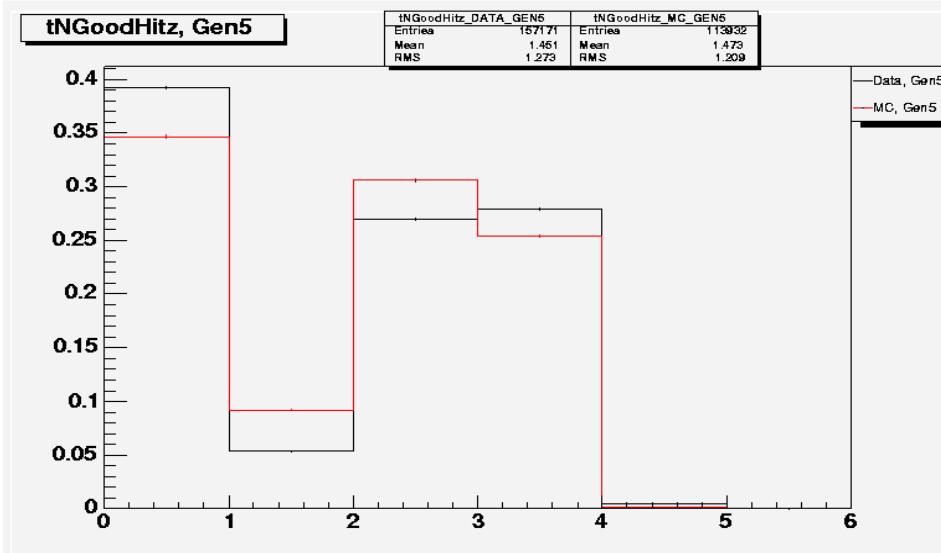
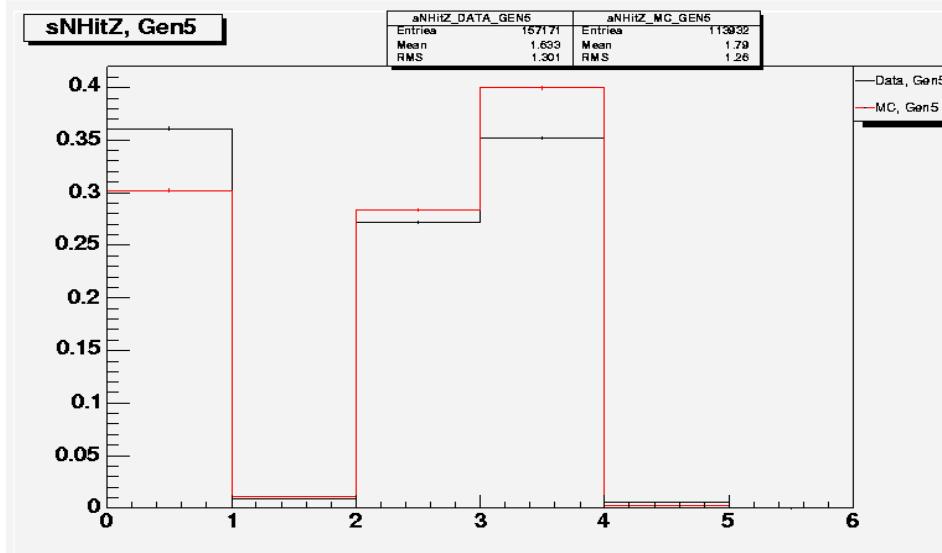


ISL



Number of SVX 90deg z hits

Good Hits



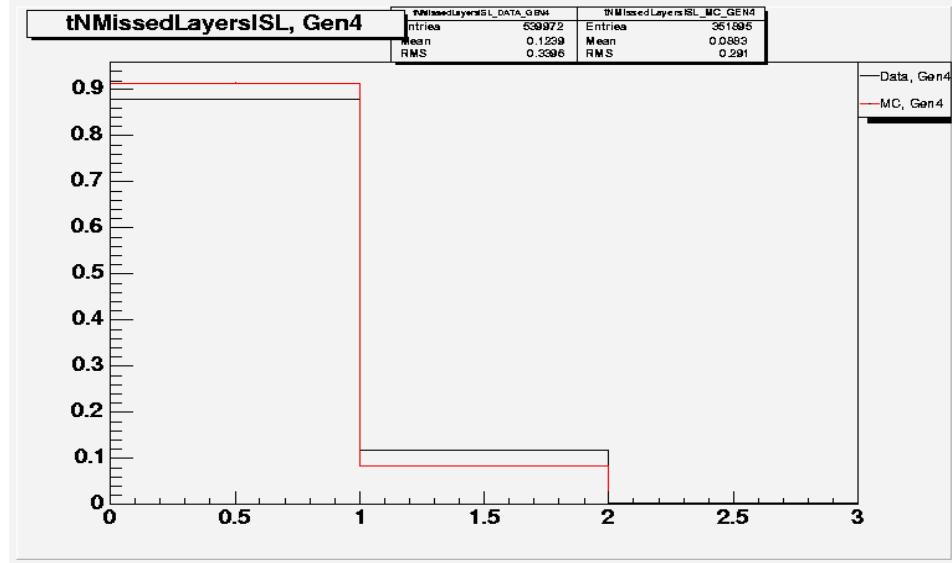
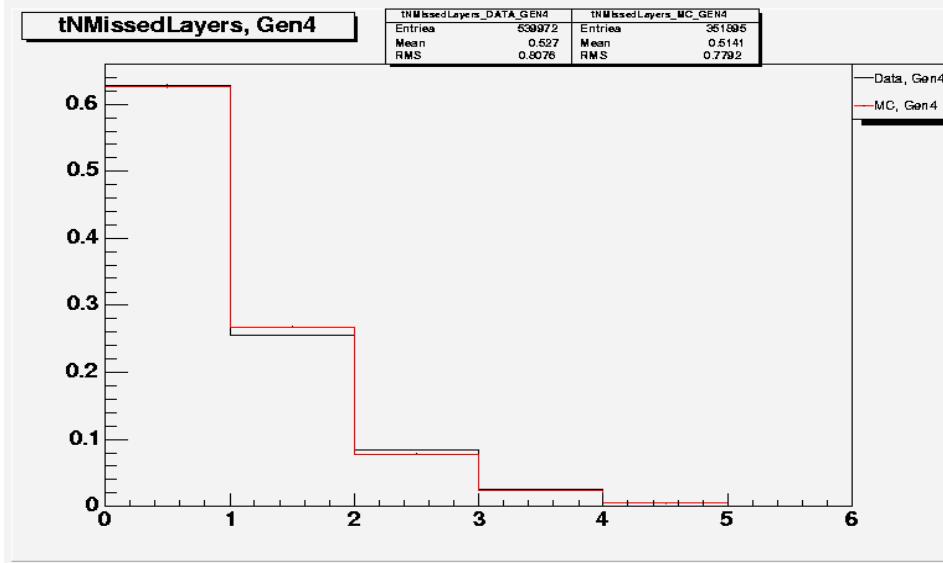
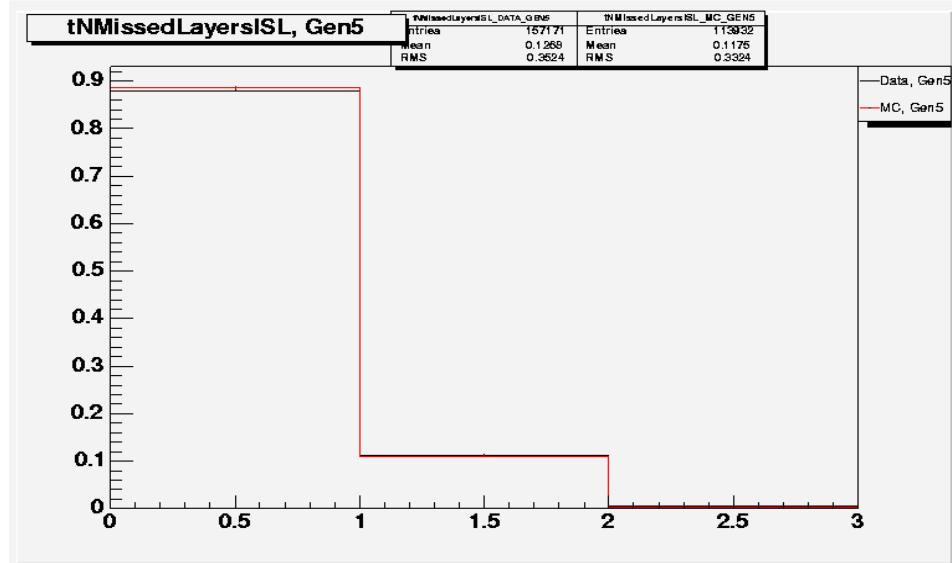
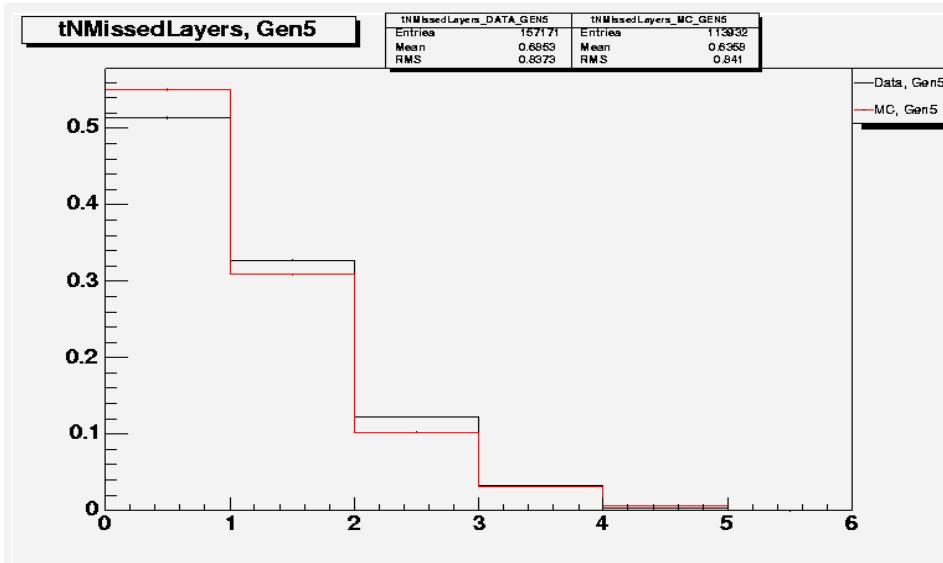


Number of missed axial silicon layers



SVX

ISL



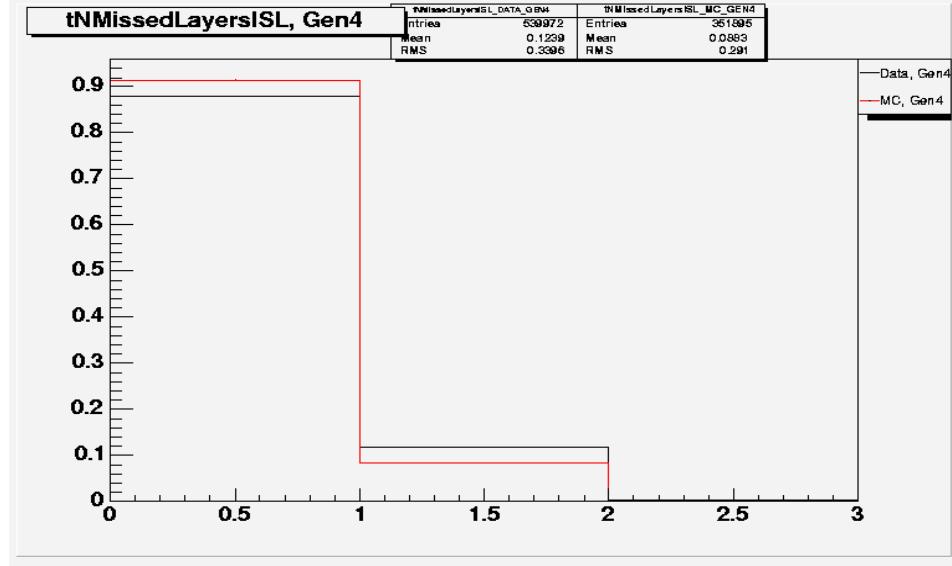
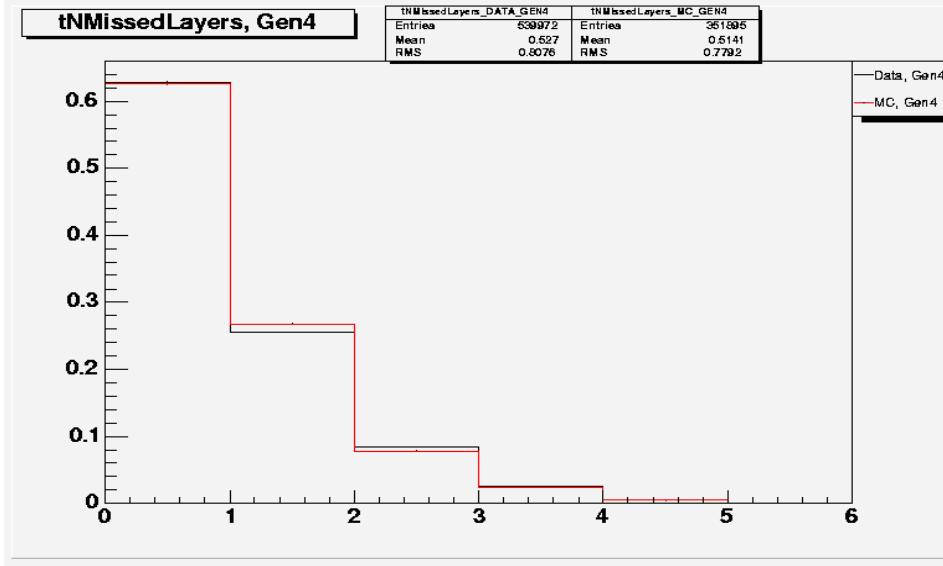
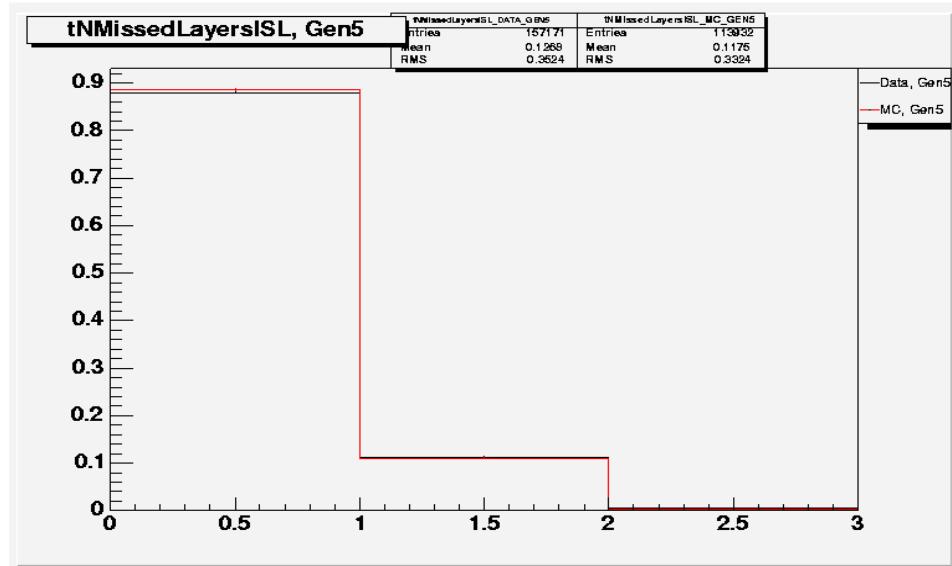
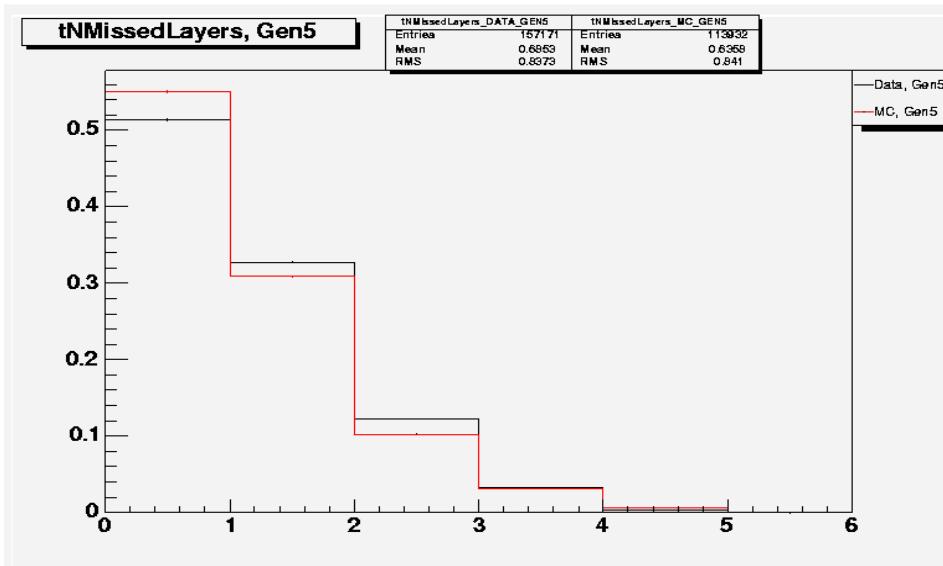


Number of missed z-side silicon layers



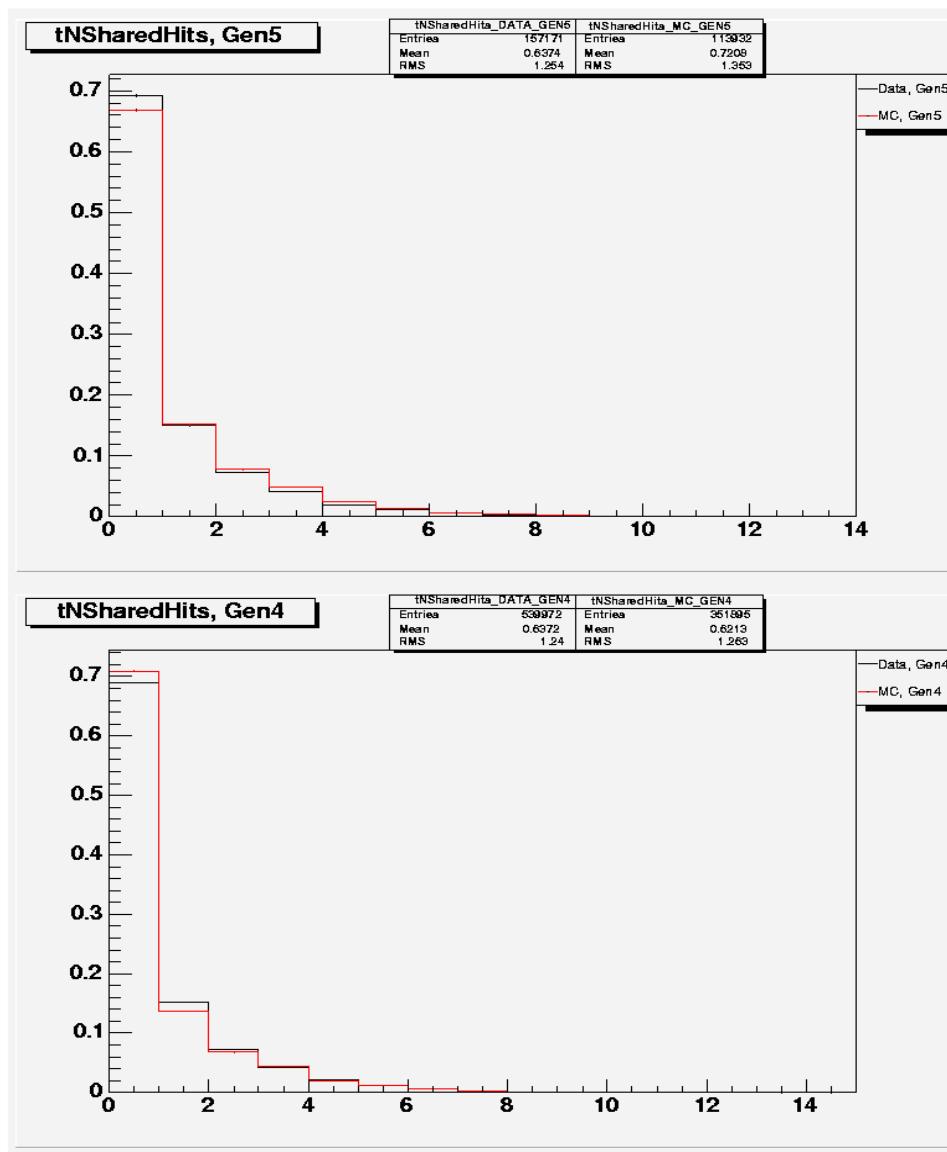
SVX

ISL

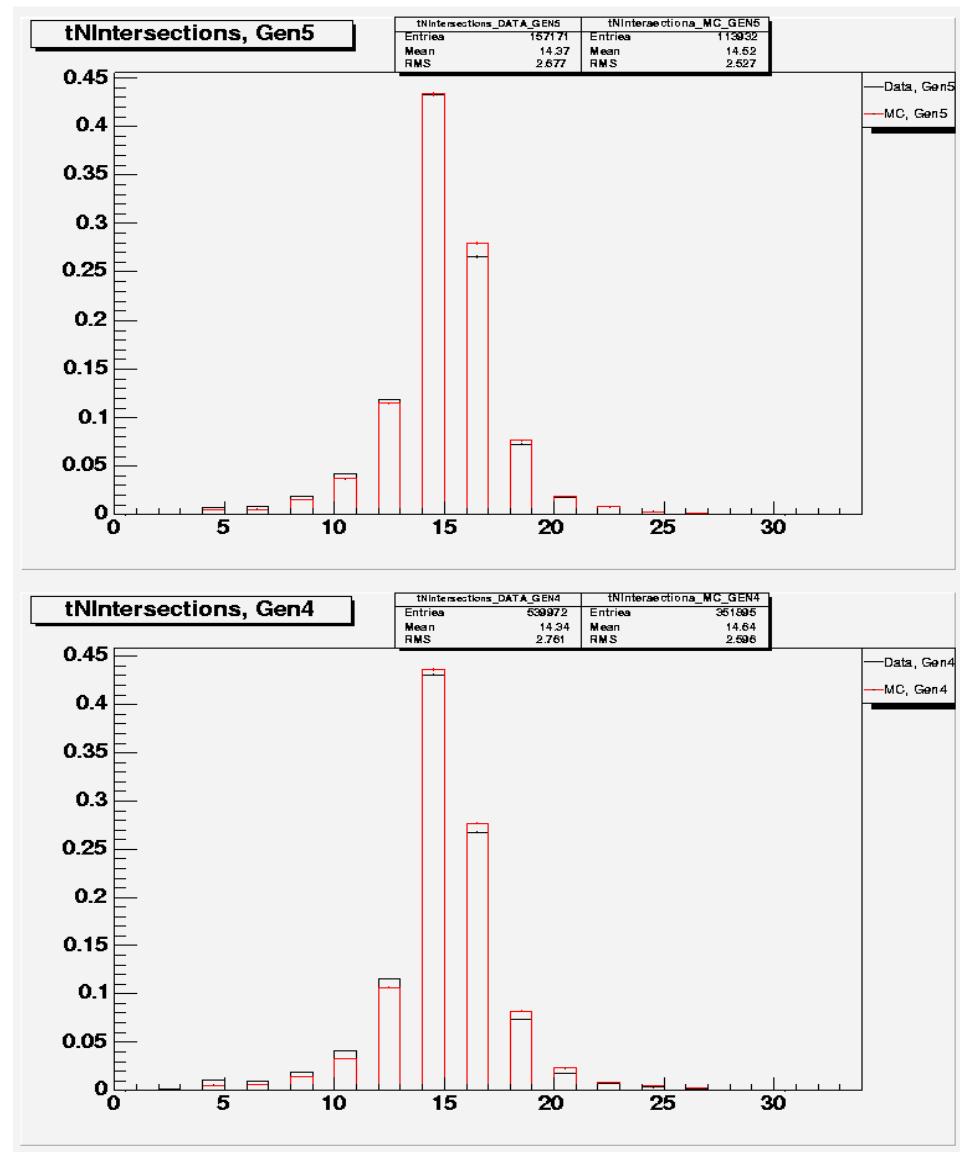


Final Silicon plots

Shared silicon hits

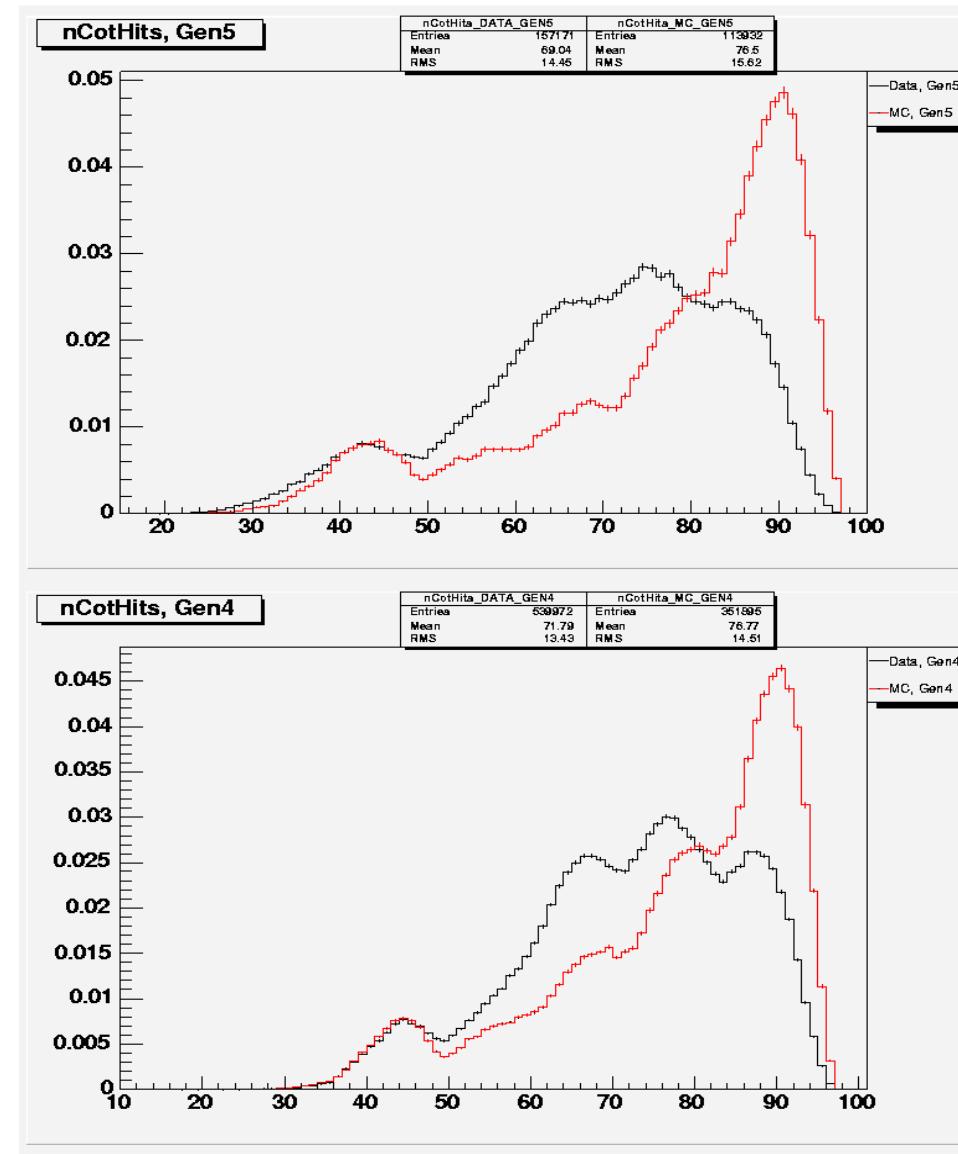


Layer intersections



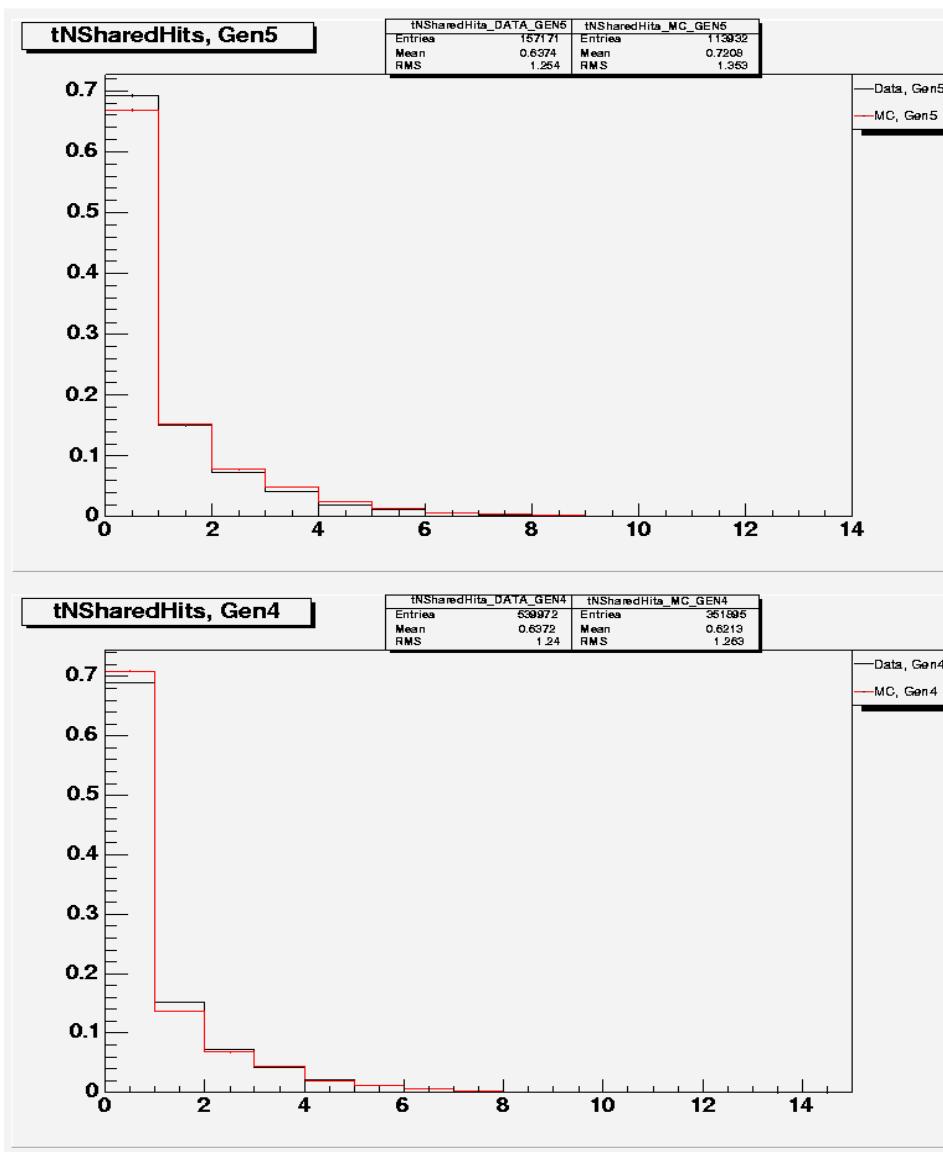
COT hit usage

Even uglier now

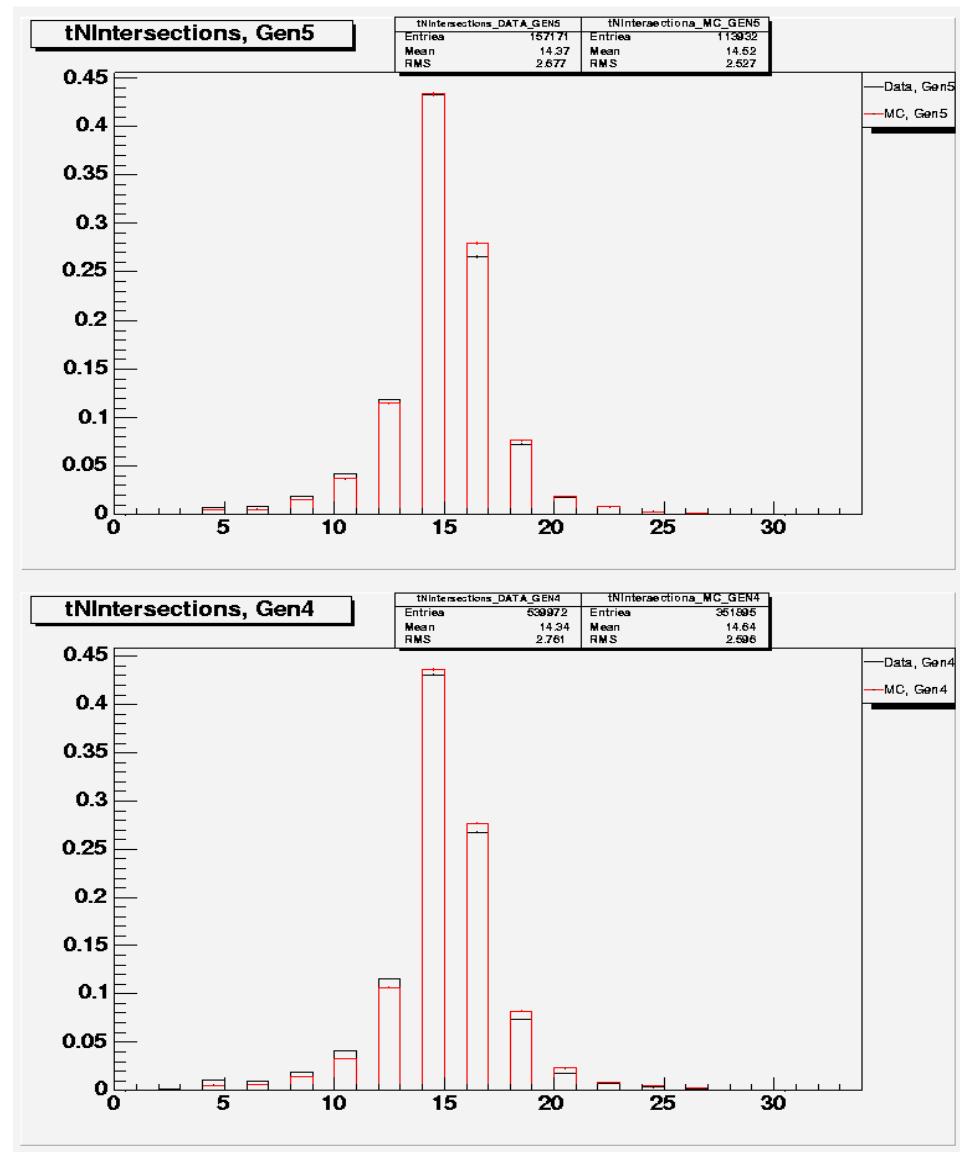


ttbar MC

Shared silicon hits



Layer intersections





Conclusion

- Silicon simulation agrees better with data in 5.3.1pre2
 - Most likely due to usage of parametric model for charge deposition
- Some silicon hit degradation in 5.3.1pre2 simulation compared to 4.9.1
 - This is a good thing!
 - Former MC was just too good
- COT hit usage is a concern
 - Even more different than before