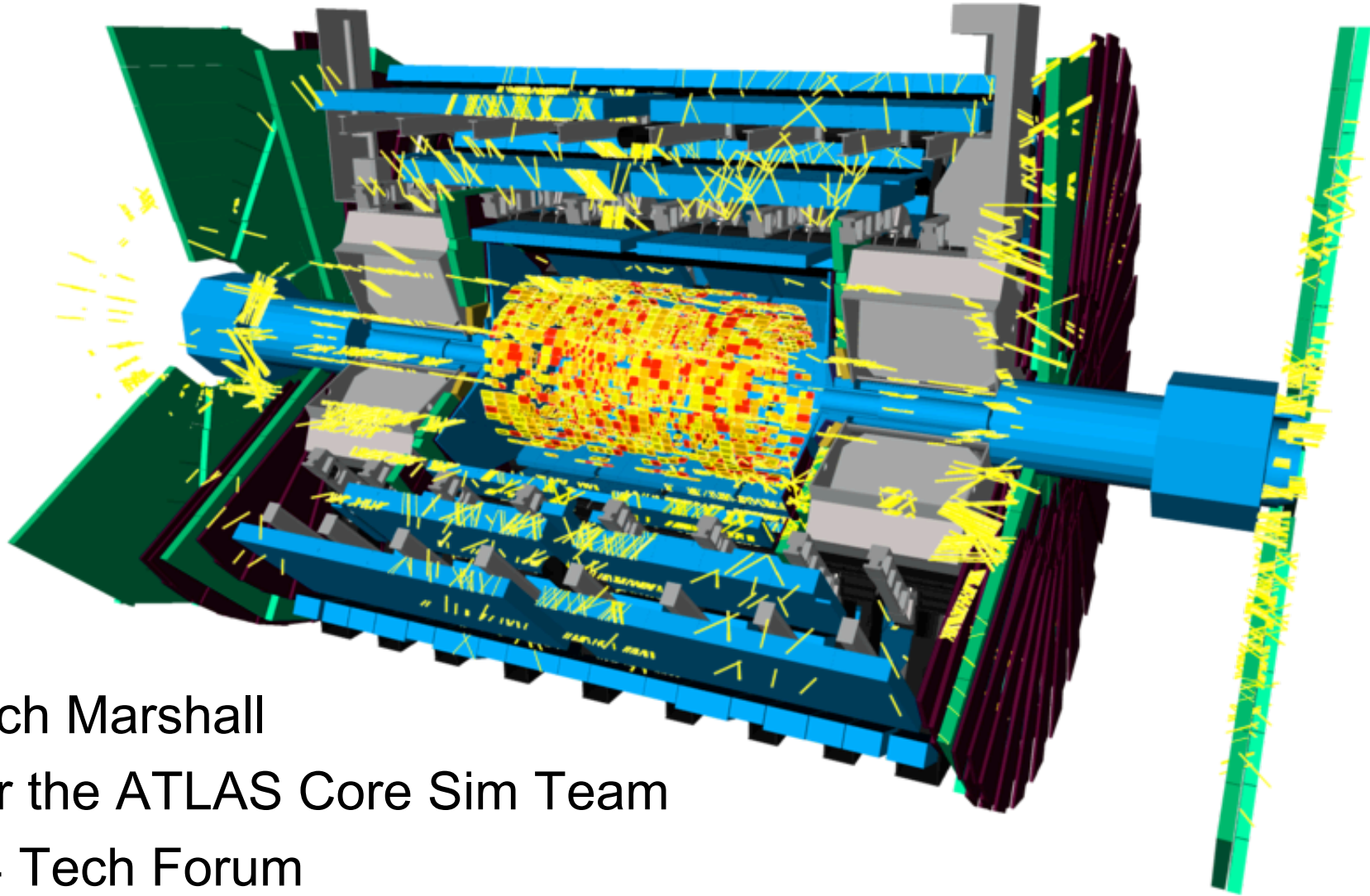


ATLAS Plans with Geant4



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Bug Reports

- No simulation crashes in production since about October 2008
 - 250 million events simulated with Geant4
 - Production used both 9.1 (patch3) and 8.3
- One minor bug fixed by Makoto in private code
 - Decrementing the count of final state particles when they were cut
 - Had already been protected against in ATLAS code for quite some time
- Thanks to the G4 team for a lot of work last fall, and for a *very* robust release!

Optimistic Plans

- ATLAS is working on a migration to Geant4 9.2
 - Will begin with release cut this week
- *IF* there are no show-stoppers, we will be using 9.2 for first data taking this fall
 - From test beam comparisons, appears sampling fraction in tile calorimeter changed by several percent when using the new default electron/positron multiple scattering
 - If the new physics requires extensive changes (complete MC recalibration), we may not want to take the several months to do so now
- Fall back plan is to use Geant4 9.1 patch3
 - We would be using this release through first data taking
 - Little desire to change mid-way through the run...

Compilers

- Our current default platform is 32-bit builds with gcc3.4.6 on SLC4 (against CLHEP 1.9.4.2)
- We plan to migrate to SLC5 about the same time that lxplus does, late spring to early summer
- We plan to migrate to gcc4.3 about the same time
- If we move to G4 9.2 as well, our performance is 25-30% better than it was last year (thanks!)
- If we fall back to G4 9.1, *it will be critical* for us to have some level of support for G4 9.1 with SLC5 and gcc 4.3
 - This has been technically tried, and there are no show stoppers
 - But the output must be validated - just because it runs doesn't mean it's running correctly!