Powheg WWbb NLO+PS in ATLAS

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with help from many people (including Zach Marshall, Dan Hayden, James Robinson, Riccardo Di Sipio, Christian Herwig, and Markus Seidel)
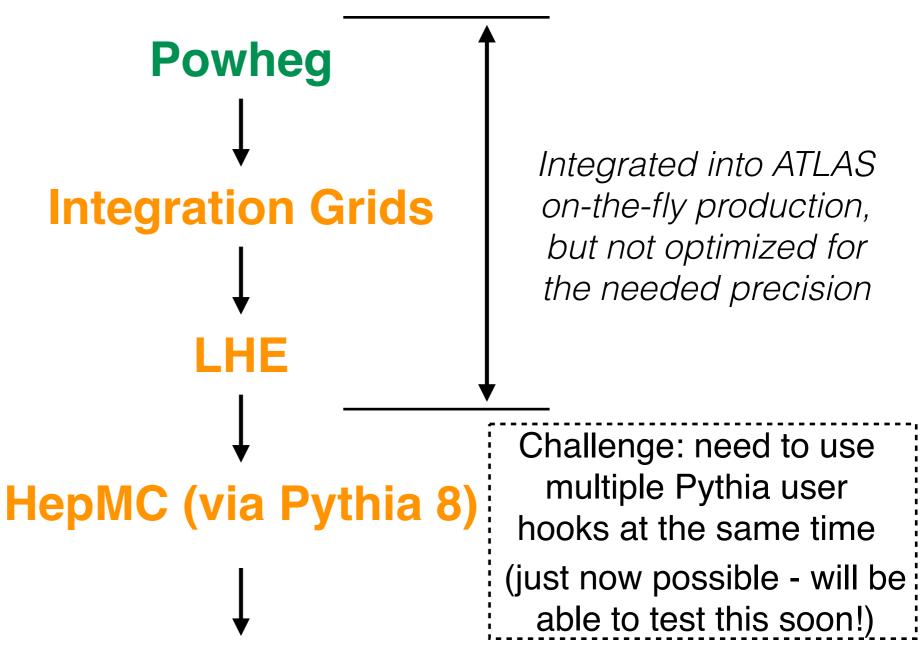
(and of course, Tomas Jezo!)

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Orange: private production, mimicking as close as possible the authors setup.

16 cores with 0.1-0.2% precision on btidle, remnants and the totals (me); 0.1% precision with 64 cores (authors)

Green: fully exercised
We have first samples and plots (though not public)

Powheg

↓

Integration Grids

↓

LHE

↓

Integrated into ATLAS on-the-fly production, but not optimized for the needed precision

HepMC (via Pythia 8)

Challenge: need to use multiple Pythia user hooks at the same time (just now possible - will be able to test this soon!)

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EVNT (ATLAS HepMC format)

ATHENA job on HepMC output

Truth DxAOD
truth-level analysis format

Geant4 + Digit + Reco -> (D)xAOD

-Would be great to get LHE and LHE + shower files for direct comparison to make sure we are doing something sensible

Maybe 1M LHE events and 100k HepMC?

-We are currently generating the integration grids on private (highly multicore) resources like the authors. CMS is using lxbatch. Is there a reason we all don't share integration grids?

(need to agree on things like the top mass)