

Atlas event generators

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Overview

- status of productions
- Versions in use
- Future plans

Productions

- Large scale production completed for Physics workshop (June 2005)
 - 8M events through full simulation and reconstruction
 - ~ (200) physics processes
 - used: Sherpa, McAtNLO, Herwig/Jimmy, MadGraph, Comphep, Tauola, Photos, EvtGen, Alpgen, AcerMC, Pythia
 - All interfaced via HepMC, HepMC also used for Geant-4 particle storage
- Since May 2005 we have evolved to new versions in preparation for CSC (Computing system commissioning)
- CSC runs now through late 2006: 10+M events
- last large scale production before data: all tools are being used.
 - CSC physics content being defined now (represents all “early data”)
 - evgen production starts Jan 2006: testing/validation underway

Tools in use for CSC

- Pythia 6.323: using PYEVNW not PYEVENT, not affected by bug. Retuned underlying event. GENSER VERSION
- Herwig 6.507.2 (with patches) (GENSER). Jimmy4.1 (tuned)
- Sherpa (tuned). public version from authors. Runs externally and then imported. Using Sherpa HepMC output
- Lhapdf 4.0 GENSER (pdflib dropped)
- Evtgen (private version)
- Alpgen. public version (2.04) from authors. Runs externally and then imported into Herwig. Not using pythia as upveto does not work with PYEVNW.
- Mc@NLO. public version (3.10) from authors. Runs externally and then imported into Herwig.

- Tauola (v170Oct2005, private version), photos (2.15)
- HepMC and “translators” from fortran where needed

Using private version: CLHEP version in atlas does not allow latest HepMC/CLHEP

Might prefer to use maintained version, provided bug fixing is prompt (2 weeks): bugs still show up in translators (sometimes due to bugs in HEPEVT record).

No plans to drop private version at present

Future

- Update pythia version (alongside existing one): Feb 2006
- Update Herwig/Jimmy: GENSER for both: Feb 2006
- New EvtGen interface for all physics (currently only used for specialized b production): GENSER version
- GENSER versions of photos and tauola
- Code freeze at some point: new things added, but nothing dropped.