

GENSER status

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List of generators in the GENSER

Alpgen 2.1.2, 2.1.1
Evtgenlhc 8.15, 8.14
Herwig 6.510
Herwig++ 2.0.1
Hijing 1.383bs.2
Hydjet 1.1
Jimmy 4.31, 4.2
Lhapdf 5.2.3
Photos 2.15
Pyquen 1.1
Pythia6 411, 410, 409, 227
Pythia8 080, 070, 060
Sherpa 1.0.9, 1.0.8
Stagen 1.11
Tauola 27.121
Thepeg 1.0.1
Toprex 4.23

Generators marked with red color have two versions with different hepevt sizes
NMXHEP= 4000 and 10000

In magenta color marked recently changed versions

Recent changes due to requests from experiments

1. Request from CMS. For TAUOLA-27.121 was added a possibility to compile TAUOLA libraries together with PYTHIA6 libraries. In this case the TAUOLA libraries do not overwrite PYTHIA common blocks. Configure file in the main TAUOLA directory was changed and Makefiles were replaced with the ones proposed by CMS.
2. Request from ATLAS. PYTHIA6 and HERWIG /slc4_amd64_gcc34/lib directories now have an additional file, pydata.o for PYTHIA6 and hwudat.o for HERWIG, compiled with flag -fPIC. These files are corresponding blockdata files of the packages.

Small changes in the common structure

1. `.../MCGenerators/generator/version/platform` will have now along with directories `include/` and `lib/` and file `config.mk` as well a file `compile.log` with compiler messages to have possibility to check flags used during compilation.
2. The corresponding scripts will produce now the versions of generators with enlarged hepevt common block (NMXHEP=10000) on the fly without keeping this information in CVS. This is already made for PYTHIA6, HERWIG and TAUOLA.

New tests

Two new tests were prepared for **JIMMY**:

- QCD 2->2 hard parton scattering cross section at LHC.
- Z + jets total cross section at LHC
>=2 charged leptons + >=2 jets event fraction

Two new tests for **PYTHIA6**:

- Made from PYTHIA6 example62. All allowed processes cross sections (pp collisions with LHC energy).
- Mean multiplicity, |Eta| and Pt in QCD jets events simulated by PYTHIA6.

Write protection of MCGenerators area

The **main** generators area

`/afs/cern.ch/sw/lcg/external/MCGenerators`

now have **replica**

`/afs/.cern.ch/sw/lcg/external/MCGenerators`

The main area is write protected and all changes are placed at first into the replica. When the changes do not need to be corrected anymore the replica is synchronized with the main area.

Conclusion and future plans

- Development of GENSER continues. It becomes more friendly for users.
- Increases the number and quality of tests.
- Improves internal structure of GENSER.
- Results of tests and status of generators could be found in the WEB pages linked to the main GENSER WEB page <http://lcgapp.cern.ch/project/simu/generator>
- Additional tests with a possibility to check distributions of some kinematical variables are in a stage of preparation.
- Due to LHCb request we are going to provide Windows binaries for main generators.
- Reinvestigate a possibility to include MC@NLO into GENSER.
- Install RIVET as an additional validation package.

Backup slides

Common structure

The GENSER main area

/afs/cern.ch/sw/lcg/external/MCGenerators

It has directories

/tarFiles/generator-version.tgz ...

/distribution/generator-version-platform.tgz ...

Platform=slc3_ia32_gcc323, slc4_ia32_gcc34, slc4_amd64_slc34

/tests/examples/

/generator/version/share (sources, Makefiles, examples)

/slc3_ia32_gcc323

/slc4_ia32_gcc34

/slc4_amd64_gcc34

/compile.log

/config.mk

/include/

/lib/

Common structure

- Only information relevant to install given generator (no sources) keeps in CVS
- Author's version of generator (or very close to author's version) keeps in the `.../MCGenerators/tarFiles/` as `generator-version.tgz`
- Generators install into `.../MCGenerators/generator/version`
- `pythia6`, `herwig`, `tauola`, `photos`, `jimmy` have directories `/version/` and `/version.2/` with enlarged hepevt common block size (`NMXHEP = 4000` and `10000` respectively).