

Feedback from ATLAS

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Status

- Production still based on g4.7.1.p01 (plus private patches)
 - we are at the end of a long validation effort
 - number of bug reports now very small
- Trying to migrate future production to g4.8, but several problems encountered in testing

release	QGSP	QGSP_EMV
G4.8.0	ok	ok
G4.8.1	~5% events aborted	ok
G4.8.2	~76% events aborted	ok
G4.8.3	ok	exception (8/28 jobs)

g4.8 - comments

- Problems with g4.8.3 due to zero length steps
 - connected to very strict parameters for tracking in magnetic field
 - not present in the candidate version which we were given for pre-release testing
- An unofficial patch to 8.3 has been provided, which solves the problems
 - 8.3 + patch is the first fully functional g4 release we have since months
 - we need the patch to be officially released in order to use it in production

g4.8 - comments

- Computing performance of QGSP_EMV slowly but constantly deteriorating during g4.8 release cycle
 - QGSP_EMV on g4.8.3 is about 20% slower than QGSP_GN on g4.7.1.p01
 - **this is a major problem for production**
 - G4.8.0 + old msc was performing exactly like g4.7.1, so this must have been introduced in later releases
 - effect seems to be related to hadronic physics (more evident in single pions than single electrons)

g4.9

- First tests started on g4.9.cand07
- Now testing g4.9.0
- No runtime problems
 - only one (harmless) warning message appearing very frequently:
 - `*Warning*G4QElasticCrossSect::GetExT:-t=4.8808001e-07>2.7770743e-07`
- It would help very much if G4 could decide on a common policy for formatting its printouts
 - *Every single line* coming from G4cout should start with some common identifier (see what valgrind does, for example)
 - This would ease the parsing of the log files, which is presently the only mean we have to spot “soft” (i.e. not leading to crash) runtime problems.