



GEANT4:

Patch-02 to Release 8.1

(released on November 10th, 2006)

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for the [Geant4 Collaboration](#)



Major fixes - physics

✧ Hadronic processes - 1

✧ Fixed problem of low-energy neutrons scattering for long time

✧ Removed HP data from hadron-elastic process

✧ Added low energy threshold of 20 MeV in G4HadronElastic for Qelastic

✧ For any particle with kinetic energy below 10 KeV, the primary particle is returned unchanged and no scattering is sampled

✧ This prevents situations of low-energy neutrons scattering forever

✧ Reduces precision in computing scattering for low-energy hadrons



Major fixes - physics

✧ Hadronic processes - 2

- ✧ Introduced NaN check inside elastic processes (`G4HadronElastic`, `G4ChargeExchange`, and `G4UHadronElasticProcess`)
- ✧ Reduced warning output from `G4Fragment` on negative excitation energy
 - ✧ Maximum of 10 warnings is printed now



Major fixes - physics

✧ Electromagnetic processes

- ✧ Fixed energy non-conservation in `G4PAIMode1` for positrons

✧ Particles

- ✧ Fixed bug in `G4ParticleDefinition` constructor causing not filling quark contents when `G4VERBOSE` is not set
- ✧ Fixed bug in `k2(1770)` decay
 - ✧ Problem report #894



Other...

✧ Geometry

- ✧ Added empty virtual method `checkOverlaps()` to `G4VPhysicalVolume` to allow for proper overloading from subclasses

✧ Track

- ✧ Optimisation: made `G4StepPoint::operator=()` inline

✧ Configuration

- ✧ Updated to support Intel `icc-9.1` compiler
- ✧ Corrected setup for Windows platform



More ...

✧ See release notes on web:

✧ <http://cern.ch/geant4/support/Patch4.8.1-2.txt>