EM physics validation results for Geant4 11.1cand02

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Modifications in materials after 11.1cand01

• In all EM sub-libraries Fixed compilation warnings for implicit type conversions on macOS/XCode 14.1.
• ## 2022-11-15 Vladimir Ivanchenko (phys-ctor-em-V11-00-34)
  • G4EmBuilder - added G4AntiLambda and G4PionZero to the minimal EM particle list to avoid warnings issued due to new hypernuclei
• ## 2022-11-08 Vladimir Ivanchenko (phys-ctor-em-V11-00-33)
  • - G4EmBuilder - added G4Lambda to the minimal EM particle list needed for hyper-nuclei physics
• ## 2022-11-10 V.Ivanchenko (emstand-V11-00-19)
  • Fixed stopping power problem identified by T. Toshita G4IonICRU73Data - fixed stopping power parameterisation below lowest energy point; apply unit factor to material vector and not to data inside each element vector; include debug printouts protected by verbosity; implement data tables for materials and not material-cut-couples; provide non-zero dEdx for ions with Z > 80
  • G4LindhardSorensenIonModel - fixed CorrectionAlongStep() computations at low energy
• ## 2022-11-13 V. Ivanchenko (emlowen-V11-00-14)
  • G4MicroElecElasticModel, G4MicroElecInelasticModel - fixed simple Coverity report
• ## 2022-11-24 Vladimir Ivanchenko (emdna-V11-00-39)
  • G4DNARuddlonisationExtendedModel - fixed common work between DNA physics and radioactive decay module - before this update test2.in macro crash, because only 5 ions have data needed for this model; with this modification of the model scaling relation to the carbon ion is used for any ion, which has no data; low-energy limit is used now more correctly - all ions are stopped but not killed, because they may have radioactive decay at rest; all commented lines are removed from the class
Release monitoring by FNAL (J.Yarba)
Test Results

• Testing results will be available:
  • https://test-geant4-tools.web.cern.ch/test-geant4-tools/emtesting/

• In general, EM results are stable