New developments in Geant4 version 10 series

Tuesday 11 October 2016 11:00 (15 minutes)

The Geant4 Collaboration released a new generation of the Geant4 simulation toolkit (version 10) in December 2013 and reported its new features at CHEP 2015. Since then, the Collaboration continues to improve its physics and computing performance and usability. This presentation will survey the major improvements made since version 10.0. On the physics side, it includes fully revised multiple scattering models, new Auger atomic de-excitation cascade simulation, significant improvements in string models, and an extension of the low-energy neutron model to protons and light ions. Extensions and improvements of the unified solid library provide more functionality and better computing performance, while a review of the navigation algorithm improved code stability. The continued effort to reduce memory consumption per thread allows for massive parallelism of large applications in the multithreaded mode. Toolkit usability was improved with an evolved real-time visualization in multithreaded mode. Prospects for short- and long-term development will also be discussed.

Tertiary Keyword (Optional)

Secondary Keyword (Optional)

Parallelizarion

Primary Keyword (Mandatory)

Simulation

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Session Classification: Track 2: Offline Computing

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