



Contribution ID: 177

Type: **Oral presentation to parallel session**

Geant4 - Towards major release 10

Thursday 17 October 2013 14:40 (20 minutes)

The Geant4 simulation toolkit has reached maturity in the middle of the previous decade, providing a wide variety of established features coherently aggregated in a software product which has become the standard for detector simulation in HEP and is used in a variety of other application domains.

We review the most recent capabilities introduced in the kernel, highlighting those which are being prepared for the next major release (version 10.0) that is scheduled for the end of 2013.

A significant new feature contained in this release will be the integration of multi-threading processing, aiming at targeting efficient use of modern many-cores system architectures and minimisation of the memory footprint for exploiting event-level parallelism.

We discuss its design features and impact on the existing API and user-interface of Geant4. Revisions are made to balance the need for preserving backwards compatibility and to consolidate and improve the interfaces, taking into account requirements from the multi-threaded extensions and from the evolution of the data processing models of the LHC experiments.

Author: Dr COSMO, Gabriele (CERN)

Presenter: Dr COSMO, Gabriele (CERN)

Session Classification: Event Processing, Simulation and Analysis

Track Classification: Event Processing, Simulation and Analysis