

**ASP2014**

**Report of Abstracts**

Abstract ID : **118**

## **Geant 4 Tutorials**

### **Abstract content**

Status: i) a basic introduction to the Monte Carlo method for the transport of charged particles and radiation; ii) an explanation how this is used for the simulation of detectors for High Energy Physics (HEP) and in other fields including the development of detectors for medical physics and the assessment of treatment plans in protontherapy ; iii) the key properties of simulation tools and toolkits which are used by HEP experiments including the LHC experiments to create their detector simulation programs; iv) introduce the Geant4 simulation toolkit, explaining it's key components: geometry modelling and navigation, track selection, and the framework for physics processes v) provide an overview of the Geant4 models of electromagnetic processes, including multiple coulomb scattering, critical for accurate estimation of energy deposition I and resolution of calorimeters vi) summarise the different hadronic physics models and processes in Geant4 vii) provide a practical hands-on tutorial to Geant4 using a simplified geometry setup modeling a detector setup.

### **Summary**

**Primary author(s) :** APOSTOLAKIS, John (CERN)

**Presenter(s) :** APOSTOLAKIS, John (CERN)

**Status:** SUBMITTED

Submitted by **MUANZA, Steve Guy** on **Sunday 03 August 2014**