Contribution ID: **99** Type: **Short Talk**

Optimization of Geant4 for the Belle II software library

Tuesday, 18 May 2021 15:00 (13 minutes)

The SuperKEKB/Belle II experiment expects to collect 50 ab^{-1} of collision data during the next decade. Study of this data requires monumental computing resources to process and to generate the required simulation events necessary for physics analysis. At the core of the Belle II simulation library is the Geant4 toolkit. To use the available computing resources more efficiently, the physics list for Geant4 has been optimized for the Belle II environment, and various other strategies were applied to improve the performance of the Geant4 toolkit in the Belle II software library. Following the inclusion of this newly optimized physics list in an updated version of Geant4 toolkit, we obtain much better CPU usage during event simulation and reduce the computing resource usage by $\sim$ 44 %.

Primary authors: BANERJEE, Swagato (University of Louisville (US)); WRIGHT, Dennis Herbert; ASAI, Makoto (SLAC National Accelerator Laboratory (US)); KIM, Doris Yangsoo (Soongsil University)

Presenter: BANERJEE, Swagato (University of Louisville (US))

Session Classification: Algorithms

Track Classification: Offline Computing