

Optimization of Geant4 Simulation

Full simulation using Geant4 gives very good agreement with data; however, the level of details required to achieve this makes the code rather slow. The optimization can be divided into three broad categories. The first one is strictly technical where the output is not changed at all, e.g. recoding an algorithm to be more efficient. The second one is where we expect the output to change but at a level where physics is not affected, e.g. relaxing the calculational precision so results are still dominated by electronics noise. The third category is where the precision is dominated by the calculation, but this deterioration is acceptable for specific physics studies that choose to use this approach. At present, there are several people from SLAC working on various aspects.