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## An interface for GEANT4 simulation using ROOT geometry navigation.

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The ROOT geometry modeller (TGeo) offers powerful tools for detector geometry description. The package provides several functionalities like: navigation, geometry checking, enhanced visualization, geometry editing GUI and many others, using ROOT I/O. A new interface module g4root was recently developed to take advantage of ROOT geometry navigation optimizations in the context of GEANT4 simulation. The interface can be used either by native GEANT4-based simulation applications or in the more general context of the Virtual Monte Carlo (VMC) framework developed by ALICE offline and ROOT teams. The latter allows running GEANT3, GEANT4 and FLUKA simulations without changing the geometry description nor the user code.

The interface was tested and stressed in the context of ALICE simulation framework. A description of the interface, its usage as well as recent results in terms of reliability and performance will be presented. Some benchmarks will be compared for ROOT-TGeo or GEANT4 based navigation.

### Summary

Navigation interface of GEANT4 with a ROOT TGeo geometry.

### Submitted on behalf of Collaboration (ex, BaBar, ATLAS)

ALICE Offline Collaboration

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