



Contribution ID: 279

Type: **oral presentation**

The GeoModel Toolkit for Detector Description

Thursday, September 30, 2004 2:40 PM (20 minutes)

The GeoModel toolkit is a library of geometrical primitives that can be used to describe detector geometries. The toolkit is designed as a data layer, and especially optimized in order to be able to describe large and complex detector systems with minimum memory consumption. Some of the techniques used to minimize the memory consumption are: shared instancing with reference counting, compressed representations of Euclidean transformations, special nodes which encode the naming of volumes without storing name-strings, and, especially, parameterization through embedded symbolic expressions of transformation fields. A faithful representation of a GeoModel description can be transferred to Geant4, and, we predict, to other engines that simulate the interaction of particles with matter. GeoModel comes with native capabilities for geometry clash detection and for material integration. Its only external dependencies are upon CLHEP.

This talk describes this toolkit for the first time in a public forum.

Primary authors: BOUDREAU, J. (UNIVERSITY OF PITTSBURGH); TSULAIA, V. (UNIVERSITY OF PITTSBURGH)

Presenter: TSULAIA, V. (UNIVERSITY OF PITTSBURGH)

Session Classification: Event Processing

Track Classification: Track 2 - Event processing