

Geometry Description Markup Language and its application-specific bindings

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The Geometry Description Markup Language (GDML) is a specialised XML-based language designed as an application-independent persistent format for describing the detector geometries. It serves to implement ‘geometry trees’ which correspond to the hierarchy of volumes a detector geometry can be composed of, and to allow to identify the position of individual solids, as well as to describe the materials they are made of. Being pure XML, GDML can be universally used, and in particular it can be considered as the format for interchanging geometries among different applications.

The GDML files can be either written by hand (meaning that GDML is used as the primary geometry description) or, in case of already existing geometry implementations (in Geant4, Root, etc), generated automatically using dedicated ‘GDML writers’. In order to use GDML geometry files in specific applications, ‘GDML processors’ (based on Sax parser) have been implemented for Geant4 or Root.

In this paper we will present the current status of the development of GDML. After having discussed the contents of the latest GDMLSchema, which is the basic definition of the format, we will concentrate on the GDML processors. We will present the latest implementation of the GDML ‘writers’ as well as ‘readers’ for either Geant4 or Root. Finally, we will also briefly present plans for the future development of GDML.

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