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The GeoModel tool suite for detector description

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The GeoModel class library for detector description has recently been released as an open-source package and extended with a set of tools to allow much of the detector modeling to be carried out in a lightweight development environment, outside of large and complex software frameworks. These tools include the mechanisms for creating persistent representation of the geometry, an interactive 3D visualization tool, various command-line tools, a plugin system, and XML and JSON parsers. The overall goal of the tool suite is a fast geometry development cycle with quick visual feedback. The tool suite can be built on both Linux and Macintosh systems with minimal external dependencies. It includes useful command-line utilities: gmclash which runs clash detection, gmgeantino which generates geantino maps, and fullSimLight which runs GEANT4 simulation on geometry imported from GeoModel description. The GeoModel tool suite is presently in use in both the ATLAS and FASER experiments. In ATLAS it will be the basis of the LHC Run 4 geometry description.

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