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LCGO - geometry description for ILC detectors

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The ILC is in a very active R&D phase where currently four international working groups are developing different detector designs. Increasing the interoperability of the software frameworks that are used in these studies is mandatory for comparing and optimizing the detector concepts. One key ingredient for interoperability is the geometry description. We present a new package (LCGO) which is suited to be incorporated in the existing frameworks. Compatibility with Java and C++ is achieved through the use of gcj - the GNU Java Compiler that allows the integration of object code written in Java in C++ programs. LCGO uses a driver based approach where the geometry description is based on a combination of code and free parameters. LCGO provides a multi level API that allows the users to query the detector geometry and material properties at the level that is needed by the application. This ensures that only once source of the geometry description is needed throughout the full software chain from simulation to reconstruction, analysis and event displays.

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