

OpRelease, a framework for event simulation and analysis in OPERA

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Since few years, in the OPERA Collaboration, a new software framework (OpRelease) has been realized. It consists of a set of packages and sub-packages integrated by using the CMT tool and fully interfaced to the OPERA ROOT persistent data model (OpRData) through an Input/Output standard package called OpIO.

The OpRelease framework is based on a modular architecture of Object Oriented packages, so that the development of each package can be performed independently of the others and all the improvements can be easily. The software chain takes into account of event simulation (OpSim), digitization (OpDigit) and reconstruction (OpRec)

A software model of the OPERA detector geometry (OpGeom) has been realized by using ROOT-VMC, in such a way the geometry is independent from the choice between GEANT3, GEANT4 and FLUKA. Last but not least, the use of the ROOT/TGeomManager class and its associated objects offer the chance to transfer the OPERA detector geometry description implemented at any step of the analysis chain.

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