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## Implementation of INCL4 cascade with ABLA evaporation in Geant4

*Wednesday, September 5, 2007 8:00 AM (20 minutes)*

We introduce a new implementation of Liege cascade INCL4 with ABLA evaporation in Geant4.

INCL4 treats hadron, Deuterium, Tritium, and Helium beams up to 3 GeV energy, while ABLA provides treatment for light evaporation residues.

The physics models in INCL4 and ABLA are reviewed with focus on recent additions. Implementation details, such as first version of object oriented design, are presented, and C++ performance is compared with original FORTRAN implementation. Testing framework validating the FORTRAN-C++ translation is based on ROOT software. Some of the advanced features in testing environment, such as ROOT scripting and automatic documentation features are explained.

In addition, we introduce a new Geant4 example application using INCL4 and ABLA models, that demonstrate the physics and compare results against other models previously made available in Geant4, such as Bertini cascade.

Finally we outline the future development of Liege cascade, INCL5, in the context of Geant4 hadronic physics framework.

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