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GeantV phase 2: developing the particle transport library

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After an initial R&D stage of prototyping portable performance for particle transport simulation, the GeantV project reaches a new phase where the different components such as kernel libraries, scheduling, geometry and physics are rapidly developing. The increase in complexity is accelerating by the multiplication of demonstrator examples and tested platforms, while trying to maintain a balance between code stability and new developments. While some of the development efforts start being available for the HEP community such as the geometry and vector core libraries, GeantV is passing to the stage of demonstrator in order to validate and extend its previous performance achievements on a variety of HEP detector setups. A strategy for adding native support for fast simulation was foreseen for both framework and user-defined parametrisations. This will allow integrating naturally fast simulation within the GeantV parallel workflow, without the need to run any additional programs.
We will present the current status of the project, its most recent results and benchmarks, giving a perspective on the future usage of the software.

Tertiary Keyword (Optional)

Secondary Keyword (Optional)

High performance computing

Primary Keyword (Mandatory)

Simulation

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