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The SGV fast detector simulation program

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The need for fast detector simulation programs is emphasised, both in terms of the need for “rapid response” to new results - in particular from the LHC - and new theoretical ideas, and in terms of how to cope with multi-billion simulated event samples. The latter would arise both from the need to be able to simulate significantly more events than expected in the real data, also for high cross-section processes, and the need to scan multi-parameter theories.

The *Simulation à Grande Vitesse*, SGV, is presented, and is shown to be able to address these issues.

It must be emphasised that SGV is a *detector simulation* program, unlike parametric smearing codes such as Delphes, and therefore yields results that can be expected to emulate the experimental reality much better.

Indeed, all aspects of the tracking performance as given by SGV is shown to reproduce very closely that of the full simulation and reconstruction of the ILD concept.

Still, the execution speed of SGV is the same as that attained by parametric codes.

SGV can take its input from a number of formats (stdhep, LCIO, ...), or internally call event generators. No predefined output format is used, but running examples of producing full LCIO DST-output or root ntuples are provided.

Time Zone

Europe/Africa/Middle East

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