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Intel: GeantV - taking up the technology challenge

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In a context where LHC plans on blowing up the luminosity limits forcing experiments into stretching their original performance, the HEP software is waking up from its long “sequential” hibernation. Particle transport simulation rises up as the ideal candidate to redesign the code towards a massively parallel approach and to respond to the increasing need for simulated samples.
The R&D challenge is far from being trivial given the expectations: a factor between 3 to 5 gain in throughput with same or better physics performance, by using parallelism on multiple levels and triggering SIMD vectorisation and better cache usage, while keeping the code portable and able to use standard or opportunistic resources such as GPGPU or co-processors.
The presentation will briefly describe the project path to face these challenges, its current status and plans.

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