## 24th International Conference on Computing in High Energy & Nuclear Physics



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## **Geant Exascale Pilot Project**

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The upcoming generation of exascale HPC machines will all have most of their computing power provided by GPGPU accelerators. In order to be able to take advantage of this class of machines for HEP Monte Carlo simulations, we started to develop a Geant pilot application as a collaboration between HEP and the Exascale Computing Project. We will use this pilot to study and characterize how the machines'architecture affects performance. The pilot will encapsulate the minimum set of physics and software framework processes necessary to describe a representative HEP simulation problem. The pilot will then be used to exercise communication, computation, and data access patterns. The project's main objective is to identify re-engineering opportunities that will increase event throughput by improving single node performance and being able to make efficient use of the next generation of accelerators available in Exascale facilities.

## **Consider for promotion**

No

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