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Julia, a HEP dream comes true

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Execution speed is critical for code developed for high energy physics (HEP) research. HEP experiments are typically highly demanding in terms on computing power. The LHC experiments uses a computing grid, the Worldwide LHC computing grid, with one million computer cores to process their data. In this talk we will investigate the potential of the Julia programming language for HEP data analysis. Julia is a high-level and high-performance programming language that provides at the same time, ease of code development similar to Python and running performance similar to C, C++, and Fortran. It offers the same level of abstraction as Python, an interpreter-like experience based on a similar technique as the interpreter of ROOT, and a Jupyter notebook kernel. Results of performance measurements specific to HEP applications with a comparison with Python and C++ will also be presented.

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