

A simple introduction to accelerated computing

Tuesday 7 March 2023 13:30 (1 hour)

The use of hardware accelerators in High Energy Physics (HEP) is becoming increasingly popular since they are able to significantly reduce the computational time and CPU resources needed for processing and analyzing data. This lecture aims to familiarize the audience with the concept of hardware accelerators and parallel programming. In the first part of the lecture, the concept of accelerators, co-processors and heterogeneity will be discussed, with a focus on the Graphical Processing Unit (GPU). An overview of some of the current applications of GPUs in HEP will also be presented. The second part of the lecture will serve as an introduction to CUDA, a programming model designed for general computing on GPUs.

Domain : Parallel programming

Attended school

Exercise hours

Lecture hours

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Track Classification: Performance tuning and accelerated computing