

Multiplatform Programming with Python

Wednesday 8 March 2023 09:00 (1 hour)

In this course the students can learn how to write platform agnostic code using Python (and some C). Some knowledge (~1 year experience) of these two languages is recommended.

The lecture will focus on how Python can easily be combined with C for CPU and GPU programming, by exploiting the advantages of both languages. The goal is to introduce 3 Python libraries that are used at CERN (e.g. in modern multiparticle simulation frameworks): CFFI, CuPy and PyOpenCL. CFFI is a library for Python-C interfacing and CPU kernel execution. CuPy and PyOpenCL are libraries for kernel execution compatible with GPUs. Additionally, there will be a short review of heterogeneous programming and a comparison of the CUDA and OpenCL programming models.

In a subsequent tutorial session the students will be able to play around with these Python libraries.

Attended school

Exercise hours

Lecture hours

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Track Classification: Performance tuning and accelerated computing