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GPGPU COMPUTING FOR REAL TIME EVENT FILTERING (WITH THE HEP AS AN EXAMPLE CASE)

Wednesday 22 May 2019 10:10 (1h 50m)

With the ever increasing demand on computing power and Moore's law not being applicable any more, general purpose GPU computing (GPGPU) is used more and more widely in various fields of physics.

This lecture will give an introduction into the GPU architecture, highlight the differences to x86 and discuss which types of problems are specifically well suited for acceleration on GPUs. As example, event filtering on GPUs in real-time is discussed in the context of high energy physics experiments.

Note that a computer-based Lab will complete this introduction to GPU computing where Students will obtain first experience with programming GPUs using Nvidia's framework CUDA.

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Session Classification: PLENARY MORNING SESSION