

Contribution ID: 50

Type: Plenary

## Allen: A high level trigger on GPUs for LHCb

Monday 20 April 2020 15:30 (25 minutes)

The upgraded LHCb detector will begin taking data in 2021 with a triggerless readout system. As a result the full 30 MHz inelastic collision rate will be processed using a software-only High Level Trigger (HLT). This will allow for dramatic improvements in LHCb's ability to study beauty and charm hadron decays, but also presents an extraordinary technical challenge and has prompted the study of alternative hardware technologies. In this talk I will discuss the Allen project, a framework for implementing LHCb's first stage HLT (HLT1) on GPUs. I will focus on the development and performance of the full HLT1 reconstruction sequence executed on GPUs, including reconstruction algorithms developed and optimized specifically for many-core architectures.

## Consider for young scientist forum (Student or postdoc speaker)

Yes

## Second most appropriate track (if necessary)

Author: BOETTCHER, Thomas Julian (Massachusetts Inst. of Technology (US))Presenter: BOETTCHER, Thomas Julian (Massachusetts Inst. of Technology (US))Session Classification: Recording sessions