

Trigger and reconstruction

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Science and
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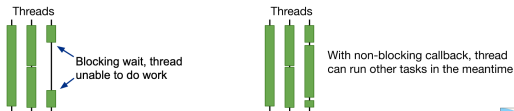
Overview

- ▶ Sign-up sheet quite sparsely populated - does not reflect the work that we know is ongoing
- ▶ Contacting people on each point and arranging small meetings just with Chris and I
- ▶ Plan a larger meeting - possibly late next month?

- ▶ LHCb are ahead of ATLAS on this (probably CMS to some degree as well)
 - ▶ Discussion planned with Sam Harper (RAL, CMS trigger coordinator) about CMS HLT status, technical setup
- ▶ Chris wrote a set of demonstrators based on recent vectorisation experience: `SE4,AVX2,AVX2FMARichPhotonRecoTestS.exe`
 - ▶ Can tell a story with examples
- ▶ Would be worth studying VDT (LHCb) vs. Intel/AMD (ATLAS,CMS?) proprietary libraries - last ATLAS study 2013
- ▶ Understand barriers to architecture-specific ATLAS builds (running on grid, sensitivity to changes etc)

GPU

- ▶ Need to hear more about Allen (LHCb) and ATLAS GPU projects
- ▶ Is anyone in CMS UK working on offloading reco (or indeed any other area) to GPU?
 - ▶ Arranging meetings on these points
- ▶ How much do we want to say on frameworks (SYCL, CUDA) vs. common GPU issues (e.g. asynchronous thread access)



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2019-11-04 Matti Kortelainen | Bringing heterogeneity to the CMS software framework



DUNE

- ▶ Meeting planned with Ben Morgan, Gary Barker and John Marshall to understand their requirements
- ▶ Maybe scope for algorithmic developments?

FPGAs, Algorithms, ACTS

- ▶ Setting up meetings with interested FPGA parties
- ▶ Mark Hodgkinson looking at future ATLAS particle flow reconstruction
- ▶ See Manuel's slides on online-ready NN implementation - promising
- ▶ Should be able to Some discussion of ACTS (Tim Adye contributing)