



Contribution ID: 32

Type: Oral

## Experience with developing FPGA accelerated data reduction in DevCloud

Wednesday, September 21, 2022 4:20 PM (20 minutes)

Field Programmable Gate Arrays (FPGAs) present interesting tool for accelerating scientific computing and artificial intelligence applications in high performance computing centers and at large scale photon and neutron facilities. Reliable, high throughput and low latency processing of data from X-ray detectors is likely the most exciting application in the latter case. Accessibility of proper hardware infrastructure and testing environment including software is a crucial component of the application development process, including implementation of continuous integration and deployment. Cloud services are well established in providing ecosystems for developing “conventional” software nowadays. Contrary, cloud service instances supporting “hardware” accelerated software are less known and domain specific applications are rather being implemented on “edge” clouds. A brief overview of public cloud services available for FPGA applications developers is given in this contribution, followed by a report on tools, experience in using Intel DevCloud for a project focused on FPGA accelerated data reduction for synchrotron data [1].

[1] *bincount implementation of Azimuthal Integration (AZINT) with FPGAs*, <https://gitlab.com/MAXIV-SCISW/compute-fpgas/bincount> (last visited on August 18th, 2022)

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**Track Classification:** NOBUGS 2022