- The poster describes the implementation of the CBM-TRD data preprocessing firmware.
- The CBM experiment will have interaction rates of up to 10 MHz
 - The goal is to measure rare probes of the QCD phase diagram with unprecedented statistics
 - Raw data rates of up to 2 TB/s
 - Online event selection with 4D track reconstruction inevitable
- The CBM-TRD is one of the biggest data producers of the experiment.
 - A great candidate to reduce the raw data load in the FPGA layer to accelerate the online event selection
- The data processing is written in C++ and is implemented with Xilinx Vitis HLS.
 - HLS allows for a much quicker design cycles.
 - Functional validation can be done completely in software.
- The implemented design is fully pipelined for maximum throughput and achieves a average data reduction of 80.6%.