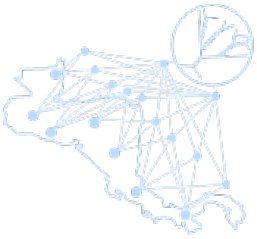

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# High performance data acquisition and processing based on programmable SoC for multichannel particle detectors

*Wednesday 2 December 2020 11:00 (30 minutes)*

Modern high energy physics experiments are characterized by a large number of detectors with several channels per detector. This leads to high amount of data generated in short periods of time (˜TB/Sec). All this data must be acquired and processed on line in order to apply complex algorithms for data reduction and filtering before storage for subsequent offline data analysis. The following presentation will briefly describe the high speed data acquisition front-end (DAQ), feature extraction and slow control based on FPGA/SoC technology applied in the context of COMPASS experiment at CERN. It will be presented a short description of the work in progress in the implementation of the DAQ in an array of electronic calorimeters (ECAL2) and the study of high speed electrical discharges propagation in Micro Pattern Gaseous Detectors.

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