Contribution ID: **13** Type: **Oral**

SPADIC - Self-triggered charge pulse processing ASIC for CBM-TRD

Thursday 26 September 2013 11:10 (25 minutes)

For the readout of the transition radiation detectors of the upcoming CBM experiment at FAIR, a self-triggered multi-channel mixed signal ASIC for signal amplification, digitization, and processing is under development.

The SPADIC 1.0 chip has 32 channels, each composed of a charge sensitive amplifier, a 9 bit pipelined ADC continuously running at 25 MHz sampling rate and a programmable digital filter for detector specific tasks such as tail cancellation and baseline correction.

The readout of whole signal snapshots is triggered by hit detection logic in each channel, or by selected neighbor channels. Data messages from the channels are multiplexed to a single output data stream preserving the order in which the hits were recorded.

The proper function of the ASIC has already been demonstrated in the lab and at a CERN beamtime. Further characterization is going on.

Primary authors: PERIC, Ivan (Ruprecht-Karls-Universitaet Heidelberg (DE)); KRIEGER, Michael (University of Heidelberg); FISCHER, Peter (Heidelberg University); ARMBRUSTER, Tim (Heidelberg University)

Presenter: KRIEGER, Michael (University of Heidelberg)

Session Classification: ASICs