



Contribution ID: 146

Type: Oral

PETIROC2 : 32 ch SiGe SiPM readout ASIC for GHz time and charge measurement

Thursday 5 June 2014 16:50 (20 minutes)

PETIROC2 is a 32 channel readout ASIC for high speed readout of SiPM matrixes. It features a 1 GHz 20 dB preamp followed by 1 GHz high speed discriminator and time-to-amplitude converter to measure the time down to 50 ps. A variable shaper channel measures the charge over 10 bits and also feeds a discriminator for high level signal trigger. The time and charge signals are digitized internally so that the chips can output only digital signals.

The ASIC is realize in SiGe 0.35um technology and takes largely advantage of the SiGe bipolar transistors to achieve GHz bandwidhts at a few mW power/channel. The chip was submitted in november 13 and is presently at dicing, experimental results will be available at the conference.

Author: Dr DE LA TAILLE, Christophe (OMEGA CNRS/IN2P3 et Ecole Polytechnique (FR))

Co-authors: THIENPONT, Damien (IN2P3/OMEGA); Mr DULUCQ, FREDERIC (CNRS/IN2P3); MARTIN CHASSARD, Gisele (OMEGA (FR)); Dr TONGBONG, Jeanne (CNRS); FLEURY, Julien (WEEROC); Mr RAUX, Ludovic (OMEGA IN2P3); SEGUIN-MOREAU, Nathalie (IN2P3 & Ecole Polutechnique (FR)); Dr AHMAD, Salleh (WEEROC FRANCE); CALLIER, Stéphane (OMEGA / IN2P3 - CNRS); BLIN, Sylvie (CNRS)

Presenter: Dr DE LA TAILLE, Christophe (OMEGA CNRS/IN2P3 et Ecole Polytechnique (FR))

Session Classification: III.a FE & ASICs

Track Classification: Data-processing: 3a) Front-end Electronics