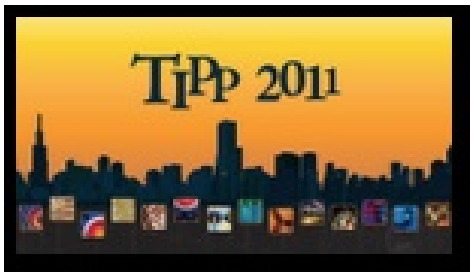

Contribution ID: **68** Type: **Oral Presentation**

EASIROC, an easy & versatile readout device for SiPM

Saturday 11 June 2011 14:30 (20 minutes)

EASIROC, standing for Extended Analogue SI-pm ReadOut Chip is a 32 channels fully analogue front end ASIC dedicated to readout SiPM detectors. This low power and highly versatile ASIC was developped from the chip SPIROC which has been designed for the Analogue Hadronic Calorimeter foreseen at the International Linear Collider.
EASIROC integrates a 4.5V range 8-bit DAC per channel for individual SIPM gain adjustment. A multiplexed charge measurement from 160 fC up to 320 pC is available thanks to 2 analogue outputs. These charge paths are made of 2 variable gain preamplifiers followed by 2 tuneable shapers and a track and hold.
A trigger path integrates a fast shaper followed by a discriminator the threshold of which is set by an integrated 10-bit DAC. These 32 trigger outputs can be used for timing measurements.
The power consumption is lower than 5 mW/channel and unused features can be powered OFF to decrease the power.
The chip has been designed in AMS 0.35m SiGe technology and 4000 dies have been produced in 2010. Its versatility allows its use in many photo detector experiments and is already used for PEBS, MuRAY, JPARC and medical imaging.

Authors: Mr RAUX, Ludovic (OMEGA / IN2P3); Mr CALLIER, Stéphane (OMEGA / IN2P3)

Co-authors: Dr DE LA TAILLE, Christophe (OMEGA - IN2P3); Dr MARTIN-CHASSARD, Gisèle (OMEGA - IN2P3)

Presenter: Mr CALLIER, Stéphane (OMEGA / IN2P3)

Session Classification: Front-end Electronics

Track Classification: Front-end Electronics