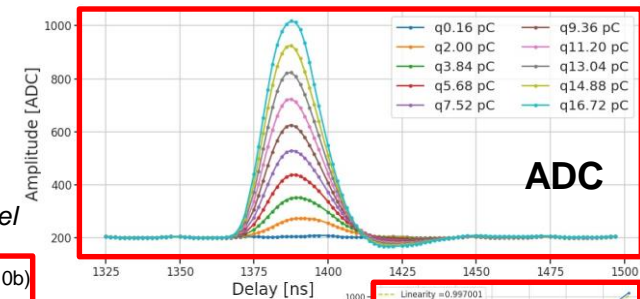
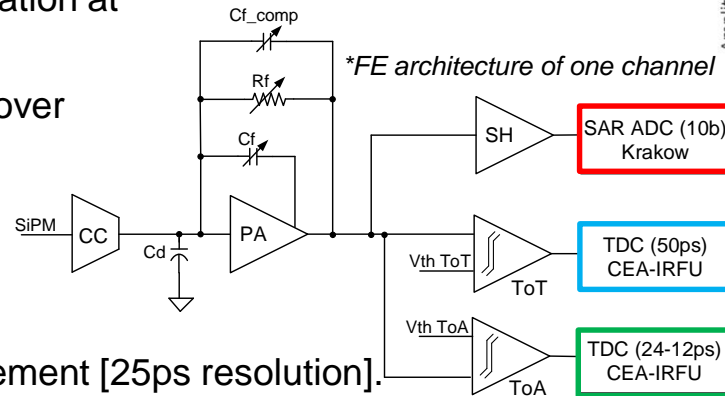


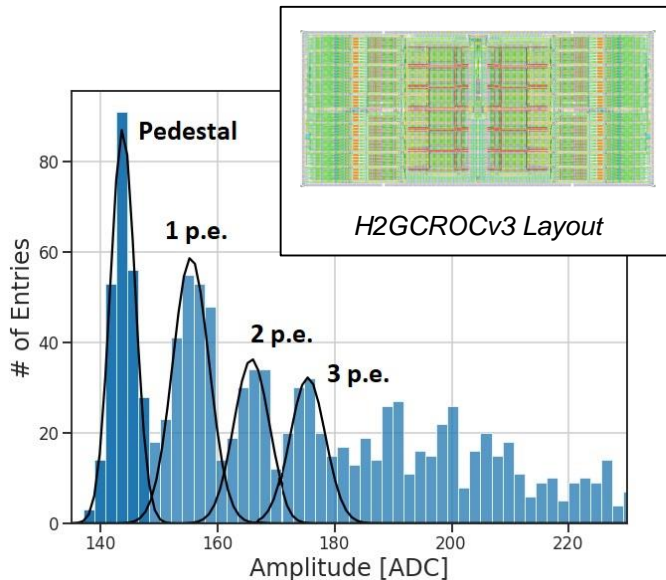
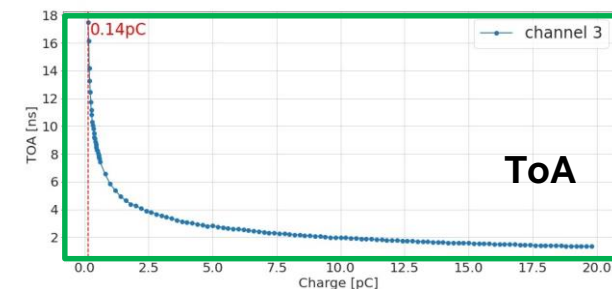
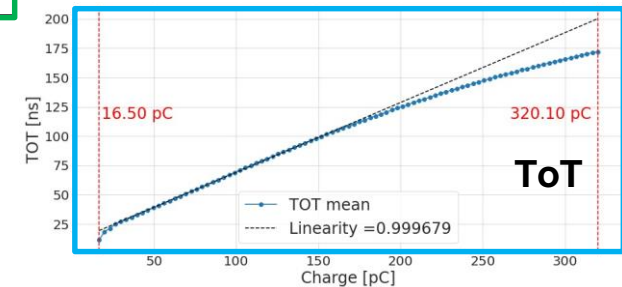
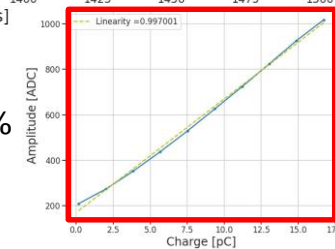
.Ωmega

Presented by J.D. González Martínez

- Radiation-hardened TSMC 130nm CMOS chip.
 - 72 reading out standard channels, 2 channels for MIP calibration, and 4 channels not connected for common-mode noise estimation.
 - Current conveyor (**CC**) attenuation at the input from 0.025 to 0.325.
 - Charge information with time over threshold (**ToT**) [200 ns and 50 ps resolution].
 - Charge measurement range from 160 fC to 320 pC.
 - Time of arrival (**ToA**) measurement [25ps resolution].
 - Leakage current compensation up to 1.2 mA.
-
- The diagram illustrates the FE architecture of one channel. It starts with a SiPM input connected to a Current Conveyor (CC) block. The output of the CC is connected to a node that also has a capacitor C_d to ground. This node is connected to a Programmable Attenuator (PA) block. The output of the PA is connected to a feedback network consisting of a capacitor C_f , a resistor R_f , and another capacitor C_f in parallel. This network is connected to a current source Cf_comp . The output of the PA is also connected to a Summing Junction (SH) block. The SH block has two inputs: one from the PA output and one from a feedback path. The SH block output is connected to a ToT (Time over Threshold) block and a ToA (Time of Arrival) block. The ToT block has a threshold $V_{th} ToT$ and outputs a signal. The ToA block has a threshold $V_{th} ToA$ and outputs a signal. The ToT and ToA blocks are connected to a common output line.



- **ADC**
Linearity of 99.7%



- Calibration circuit for internal or external injection.
- Compensation for sensor gain between channels.

Single-photon pixels measured with default configuration and phase 13 selected.