

# SAMPIC

*Wednesday, 10 October 2018 11:00 (30 minutes)*

SAMPIC is a Waveform and Time to Digital Converter (WTDC) 16-channel chip designed in the AMS 0.18- $\mu\text{m}$  CMOS technology which directly measures the arrival time of fast analog signals without the need of any external discriminator. It samples the zone of interest of the signal between 0.8 and 8.5 GS/s and precisely measures its time of arrival.

A set of boards and DAQ system has been developed to record data with detectors in a real environment. This setup, including a powerful software with an original interactive graphical interface, has also permitted the characterization of the chip, and the measurements of its time resolution which is as good as 3 to 4 ps rms after a simple correction, itself based on a very simple calibration. The raw time resolution before calibration is already better than 15 ps rms. This calibration remains very stable with time.

The current range of modules offer compact solutions with 16, 32, 48 and 64 channels. They are already used in many experiments or detector test benches. 128- and 256-channels systems are under development.

The CAEN company will soon distribute products based on SAMPIC.

**Presenter:** MAALMI, Jihane (LAL Fr)