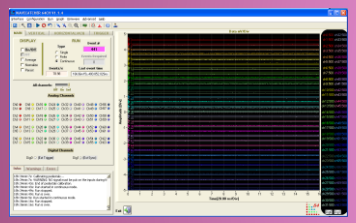
The WaveCatcher Digitizers

High End Instrumentation for characterization of Advanced Fast Detectors



Dominique Breton, Jihane Maalmi, Pascal Rusquart - CNRS/IN2P3/LAL *(Orsay)*

Eric Delagnes - CEA/IRFU (Saclay)

Frontier Detectors for Frontier Physics, 13th Pisa Meeting on Advanced Detectors, May 2015

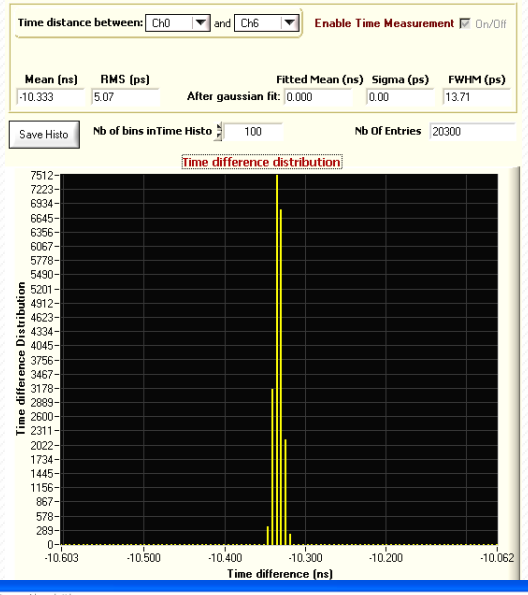
2 to 64-channel Oscilloscope-like Plug and Play Synchronous Systems

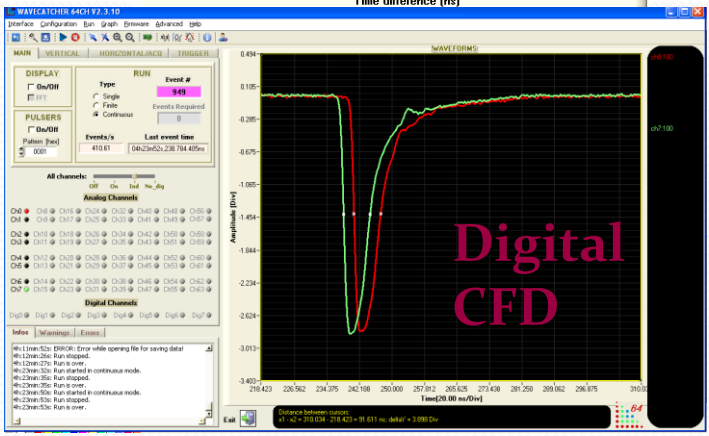
- Based on the SAMLONG Analog Memory ASIC
- Sampling rate ranging between

  400 MS/s and 3.2GS/s.
- 1024 samples/channel
- 12 bits of dynamic range
- Sampling jitter **< 5 ps rms** at the system level!
- Advanced Oscilloscope-Like Software (Plug and Play)
- Advanced triggering options
- Individual Rate counters
- Embedded feature extraction :

Baseline, Peak, Charge, Digital CFD (TDC-like mode)

Example : Jitter on a Δt of 10 ns = 5 ps rms





You are welcome!

Even more if you are interested in:

- Waveform digitizers
- Fast Analog Memories
- Trigger Architecture
- Our custom Readout architecture and Protocol
- System optimisation
- Picosecond Time Measurements
- Detector Characterization