(Quick) update on
Lab activities @ LNF

DCH R&D Meeting

25 October 2011

G. Finocchiaro - LNF

Prototype 2 Status

- All[*] 28 channels of proto2 are read out now, using CAEN's V1742 digitizer
  - A lot of work to properly configure and handle the very-recently-documented V1742 module (R. de Sangro)
  - Only channels with at least 3 bins 5 sigma's above pedestal are written to disk
  - only events with at least 1 cell in proto2 and 2+2 hits in the MT's are written to disk
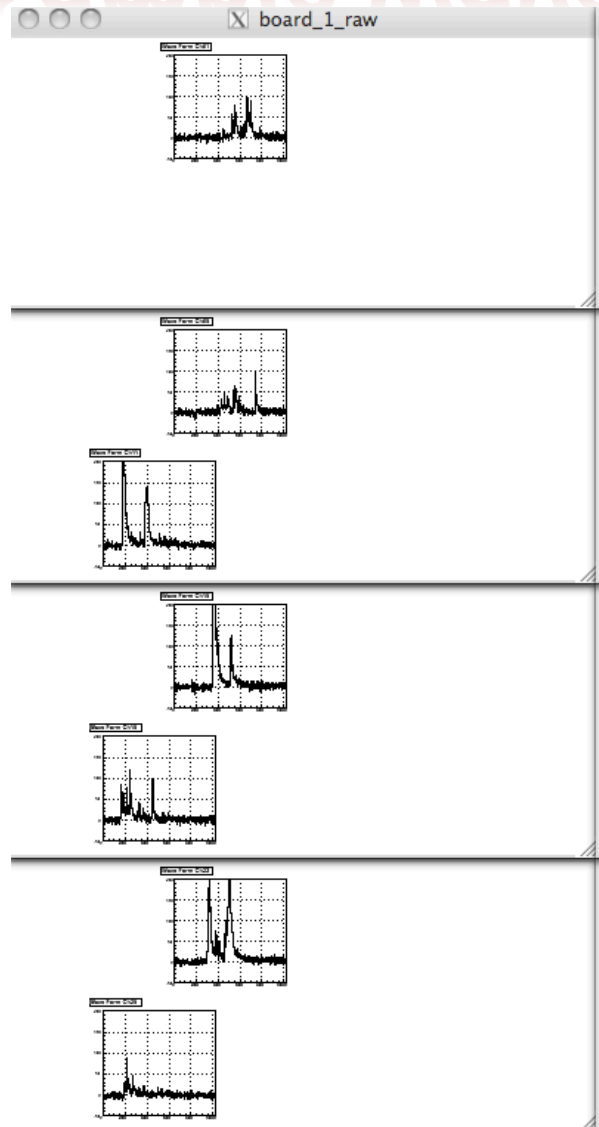   - 40kB/event
    - rate ~0.27Hz (1000 evts/hour)

[*] Excluding 5 broken MCX connectors, which we expect to replace in 1-2 days

Sample waveforms

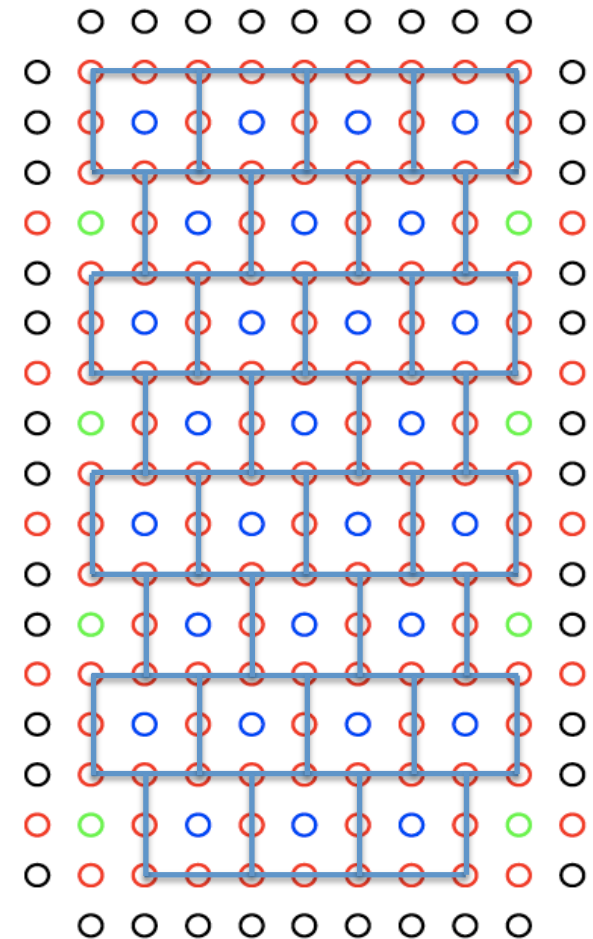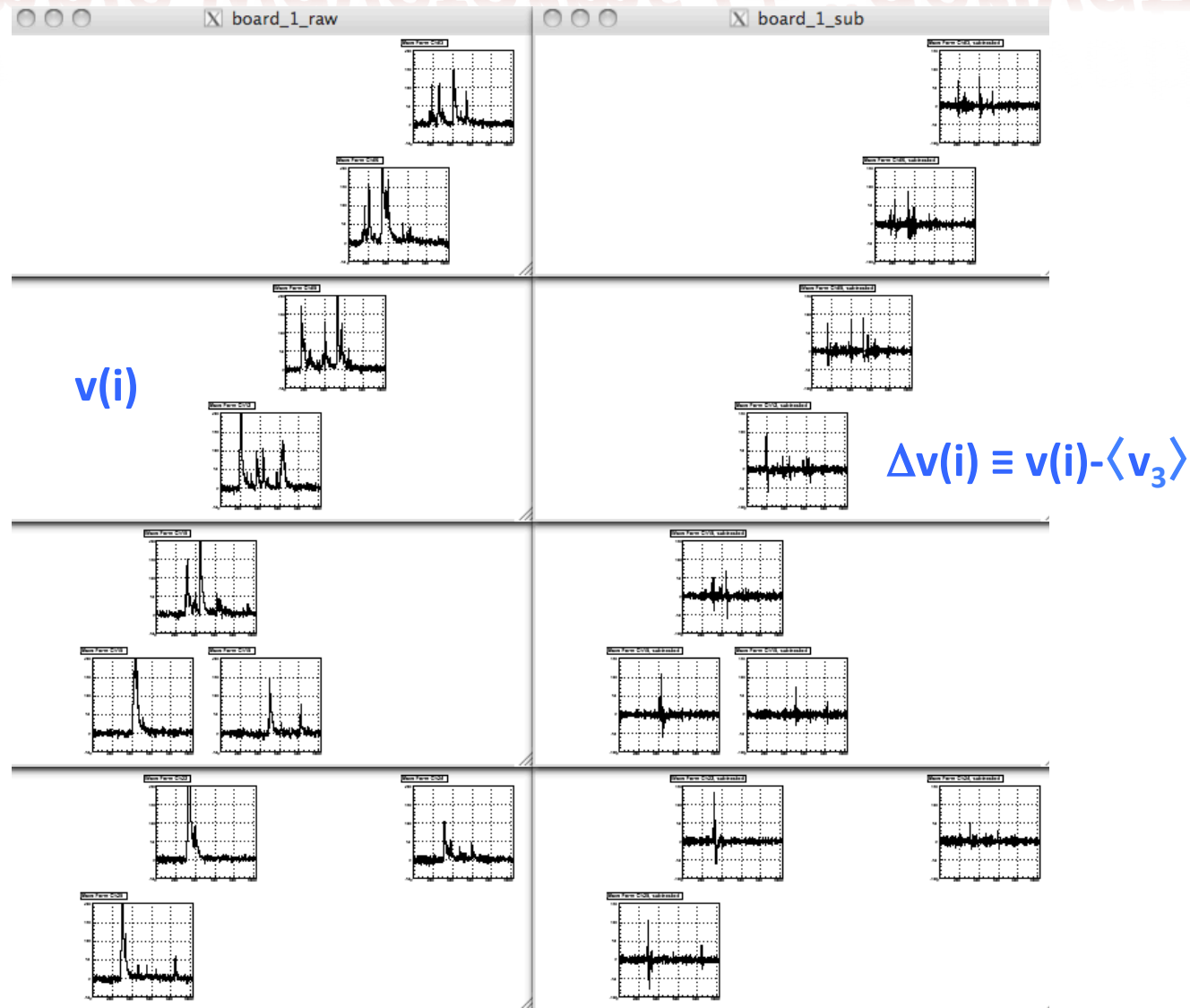90%He-10%iC$_4$H$_{10}$
HV=1700V
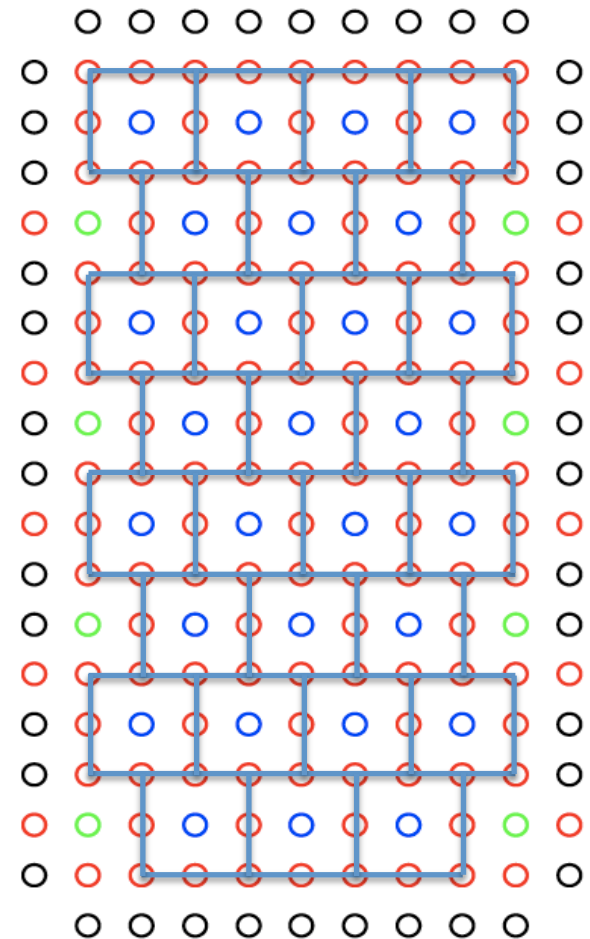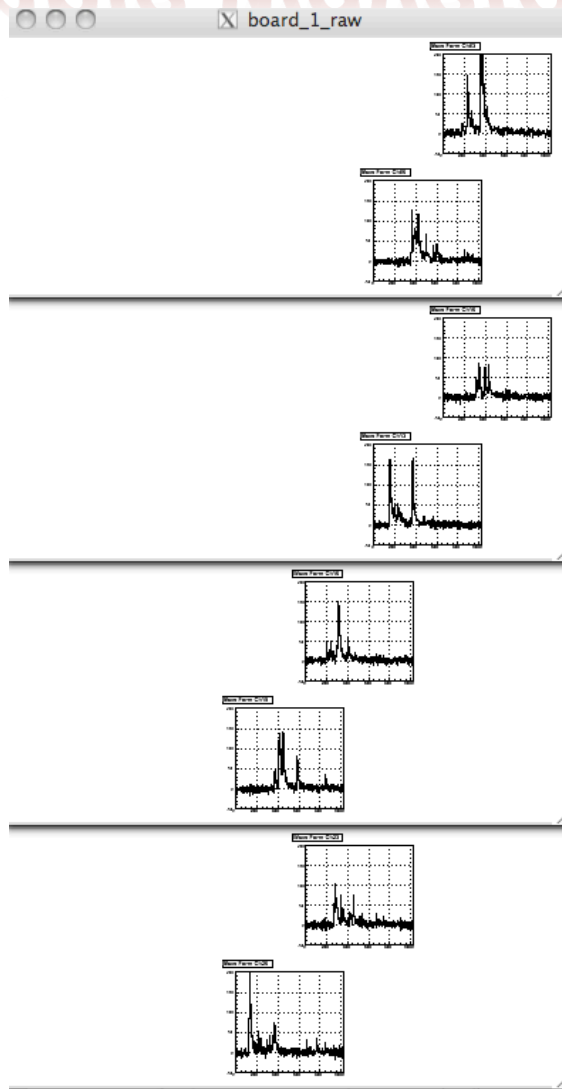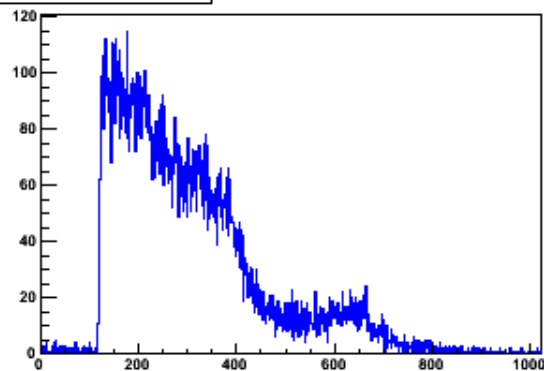
Sample waveforms

90%He-10%iC$_4$H$_{10}$
HV=1700V

Sample waveforms (+ "derivatives")

v(i)

$\Delta v(i) \equiv v(i) - \langle v_3 \rangle$

Time spectra – by readout board
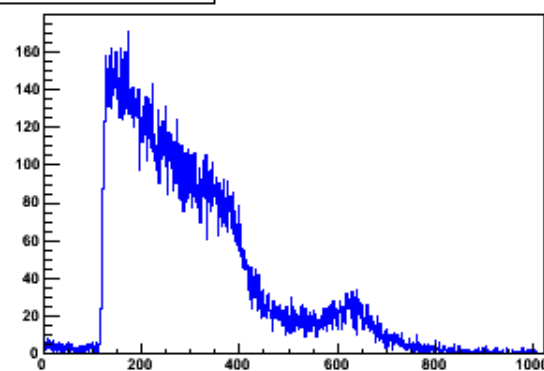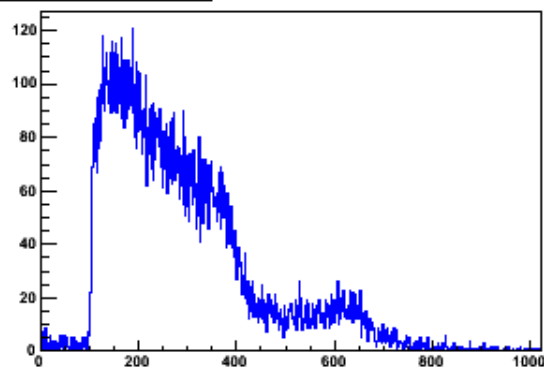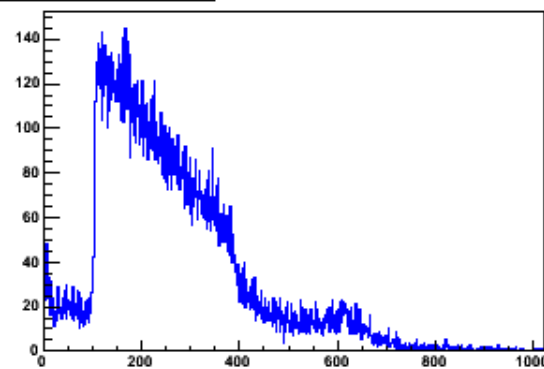
Summary and Plans

- Next steps (from London meeting)
  - Fix problem with board #2 - done
  - Precise alignment of proto2 and external tracker - done
  - Acquire all the 28 waveforms with CAEN VME module - done
  - Prepare setup with 2.5m long scintillators as trigger (anticipate increase of usable rate in proto2 by x10) - ongoing
  - Prepare rotating support for test beam – ongoing

- Next steps (as of today)
  - Measure space-time relations in proto2
  - Track particles in proto2
  - Measure dE/dx and dN/dx along tracks
    - on cosmic rays, try to vary absorber thickness below/above proto2 to modify the momentum spectrum