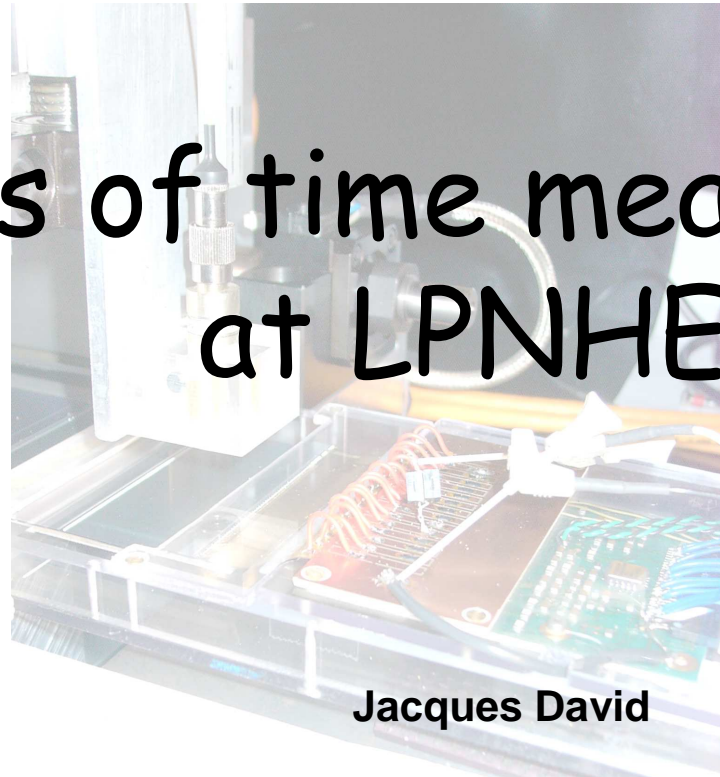


Status of time measurement at LPNHE



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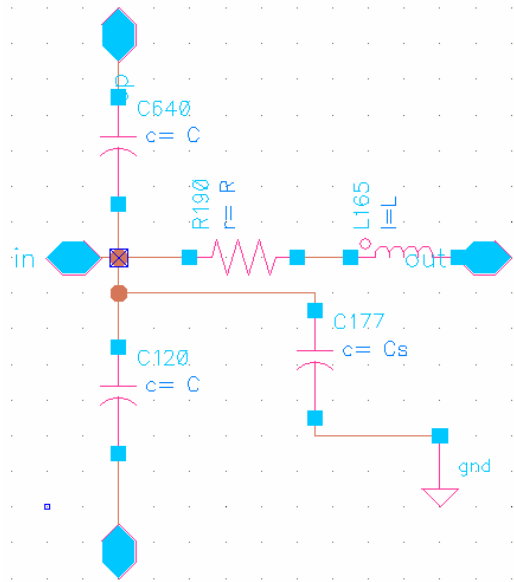


2d SiLC Workshop, February 2-3d 2006, LPNHE Paris

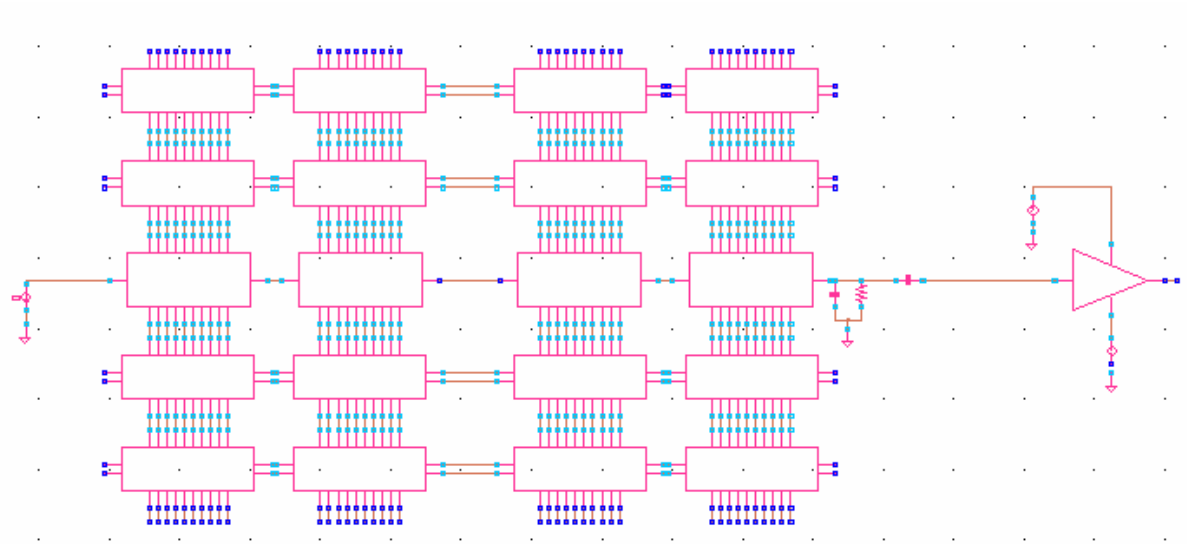
Goal: look for the possibility of time measurement on microstrip silicon detector

How: illuminate the detector at
different places with a laser beam,
and look on oscilloscope if the
measurement is relevant





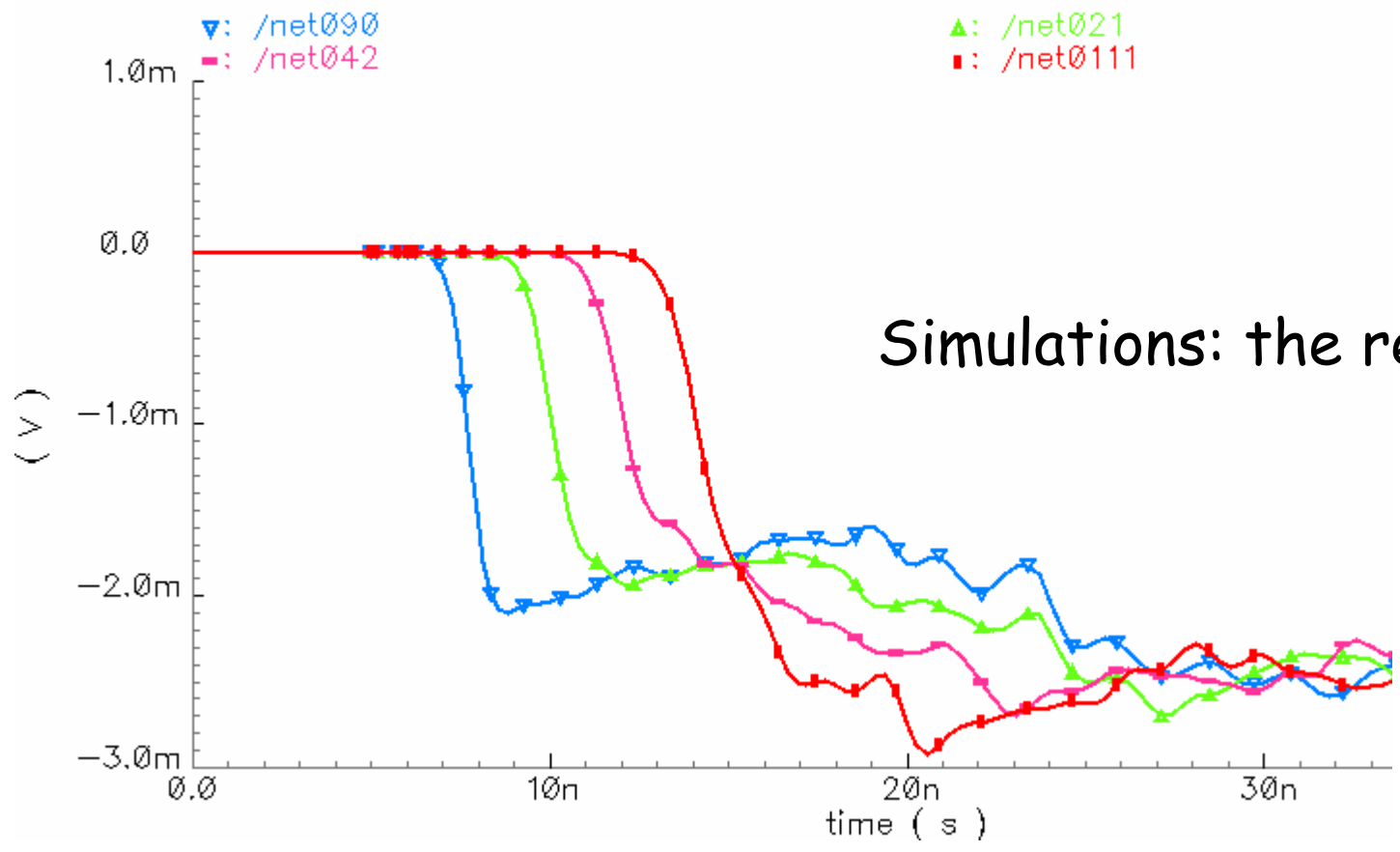
One cell (1cm)



The whole chain

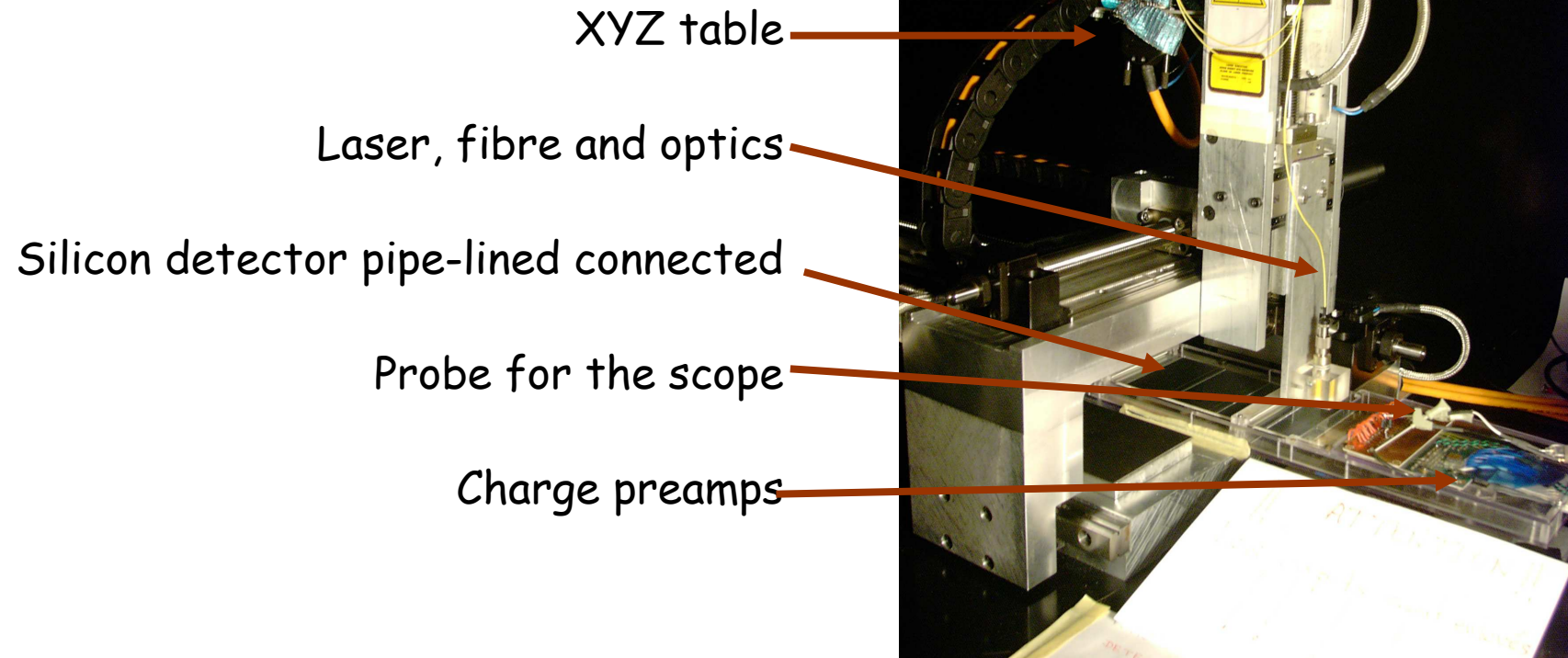
Simulations: the experiments

Transient Response

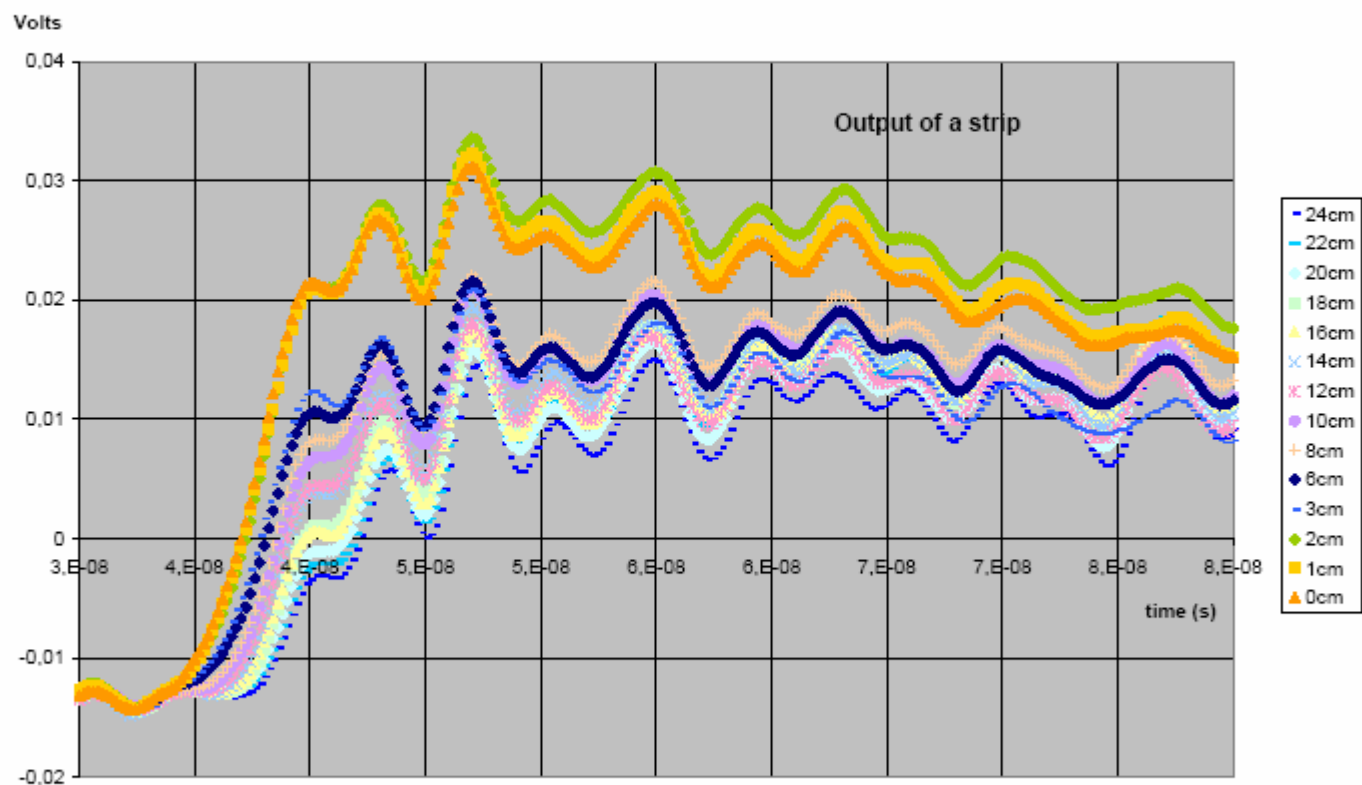


Simulations: the results

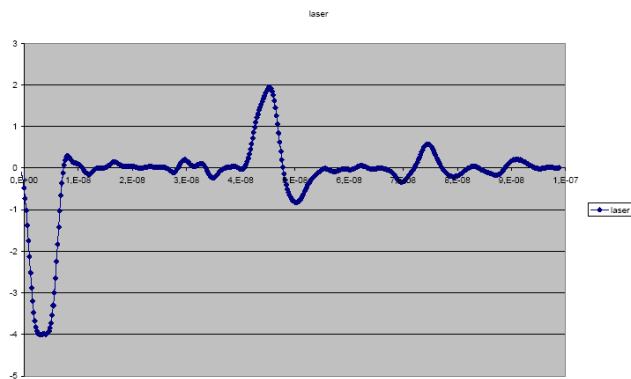
Description of the test bench



First measurements

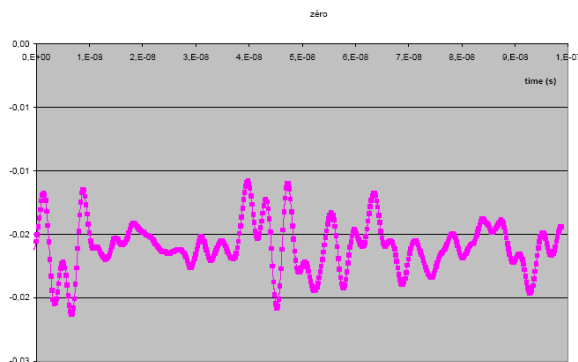


First measurements



With a laser diode

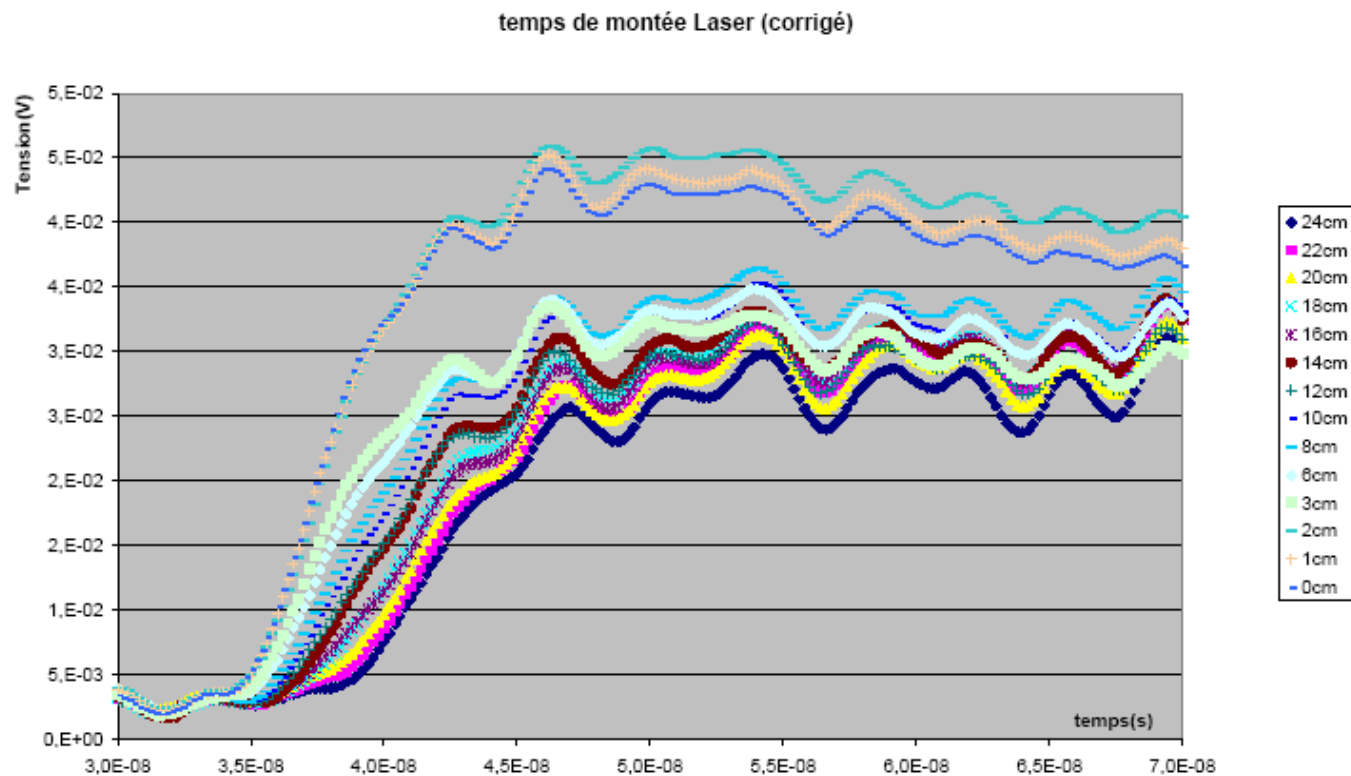
But it leads to a crosstalk which must be eliminated



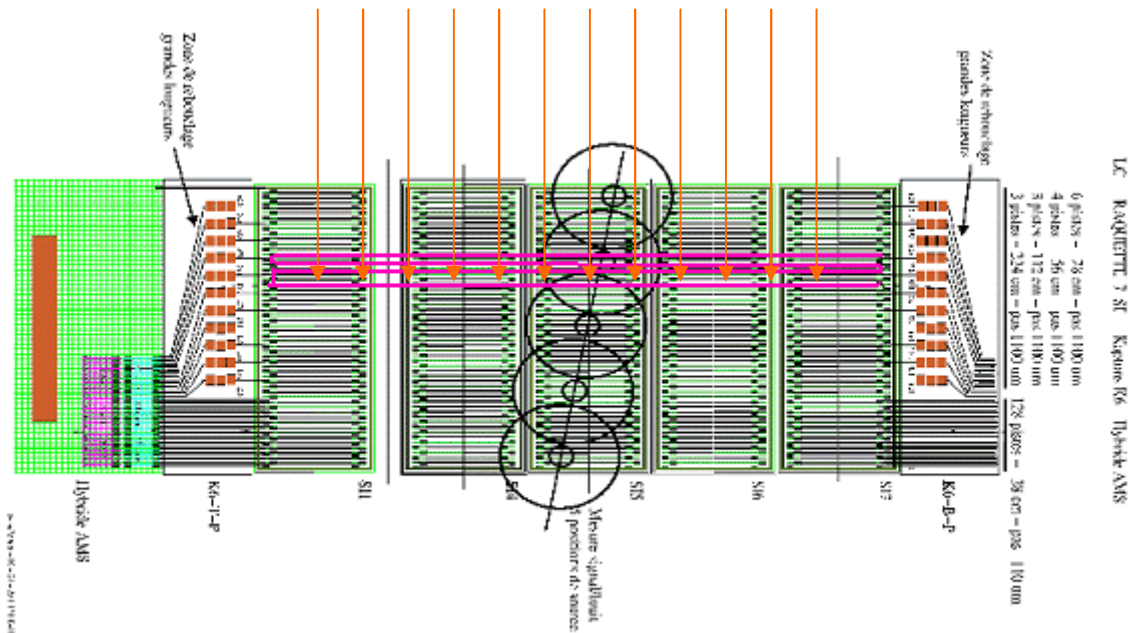
Signal from a non-hit channel

If we subtract the crosstalk:

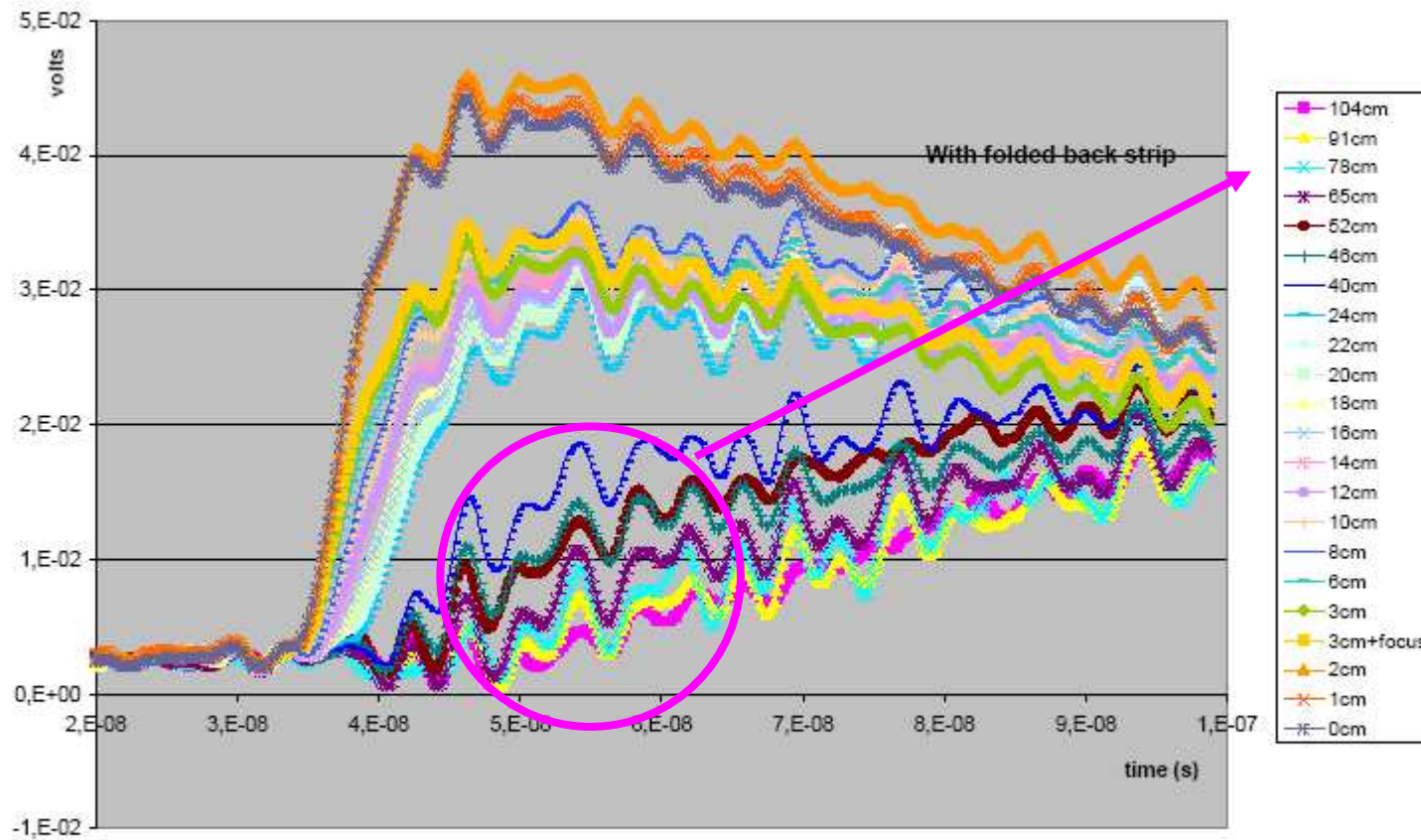
We found a preliminary 22 ns/m delay



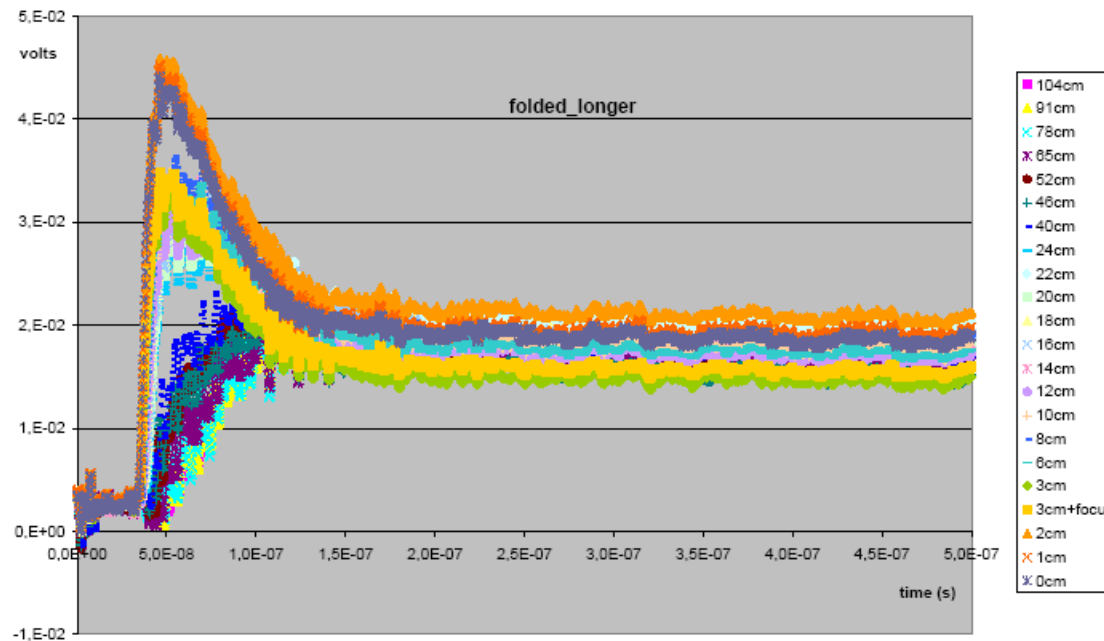
We continue to make tests on different points along the pipe-line folded back, to simulate longer strips.



But, then, we arrive to the limit of such tests.



At this point, the capacitance between strips is a dominant phenomena, and the pulse is passing through, not be transmitted by the strip.



The total charge is still there, anyway

Next steps :

- Measure and calibrate the power of the laser
- Try to define the appropriate length of the detector and test it
- Refine measurements (eliminate oscillation)
- Build (find ?) a shaper and TDC
- Beam tests