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PD signal vs casis time: some tests with oscilloscope

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Signal vs casis time

- By using several LEDs: the PD signal decrease with casis Time (i.e. integration window width)
 - More reliable test:using PicoQuant infra-red laser to inject light in a LPD.

PDL 800-D

Picosecond Pulsed Diode Laser Driver

- Pulsed and CW operation
- Easily selectable repetition rates from 31.25 kHz to 80 MHz
- Externally triggerable from single shot up to 80 MHz / sync output
- Laser pulse energy adjustable via driver unit
- Laser heads from 266 to 1990 nm, LED heads from 255 to 600 nm
- External trigger/sync output

adc_cn[2][1]:casisTime*16.66666666 {trigger==0x20}
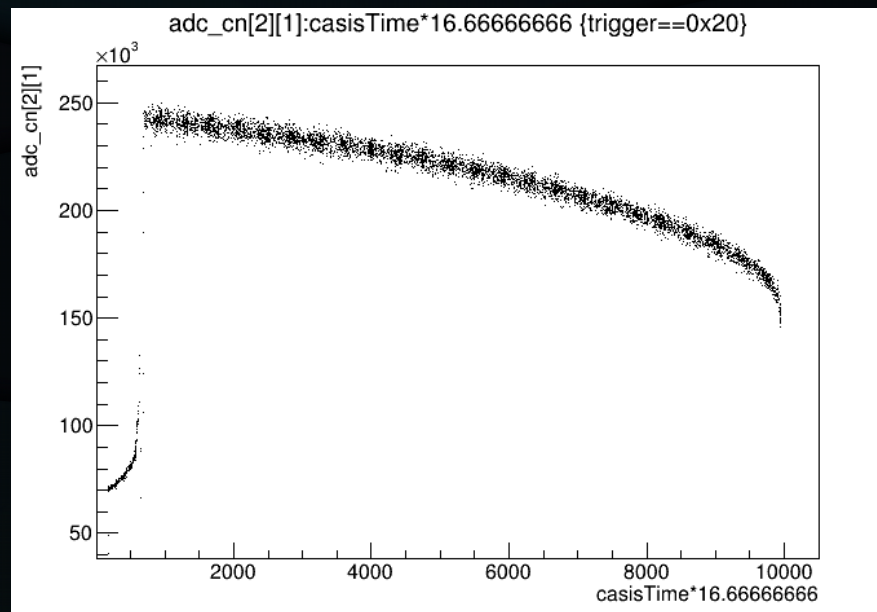
Oscilloscope test, modified HIDRA

- We disconnected from a HIDRA channel a coupling capacitor, we measure with oscilloscope the signal on the coupling capacitor.
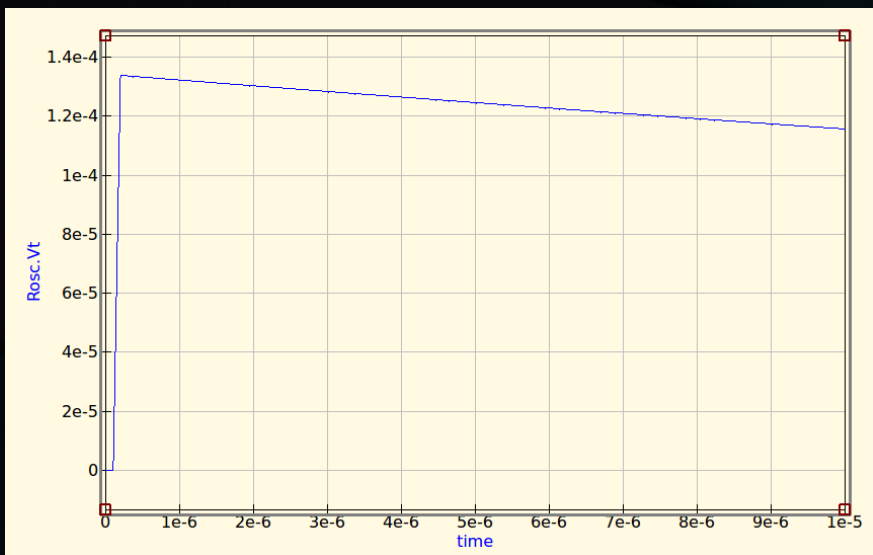

Scolopendra + board simplified circuit
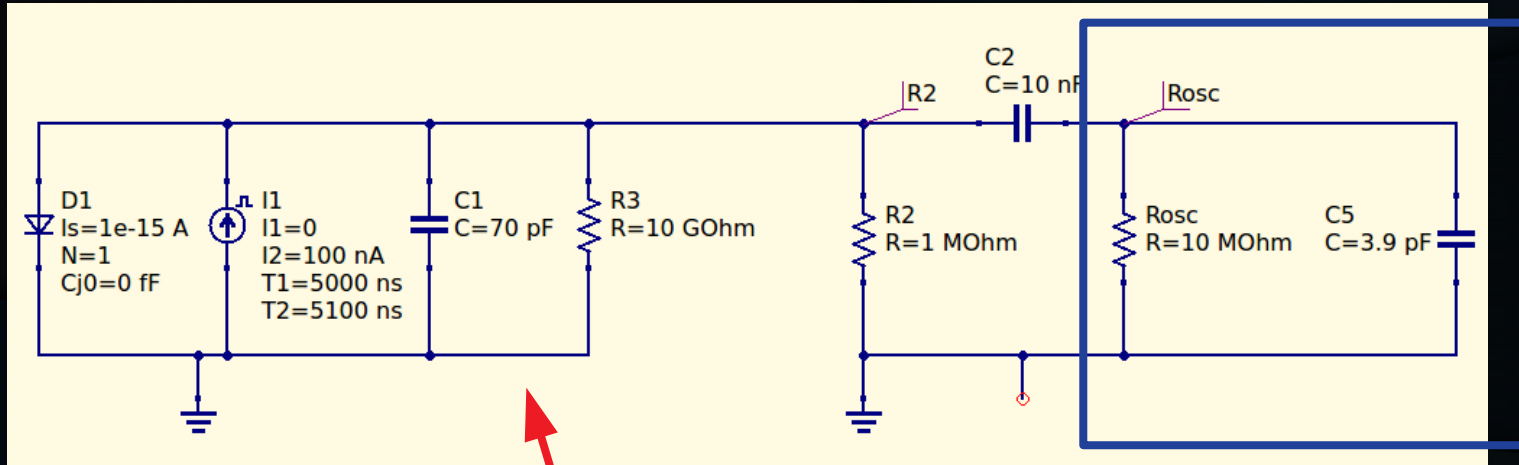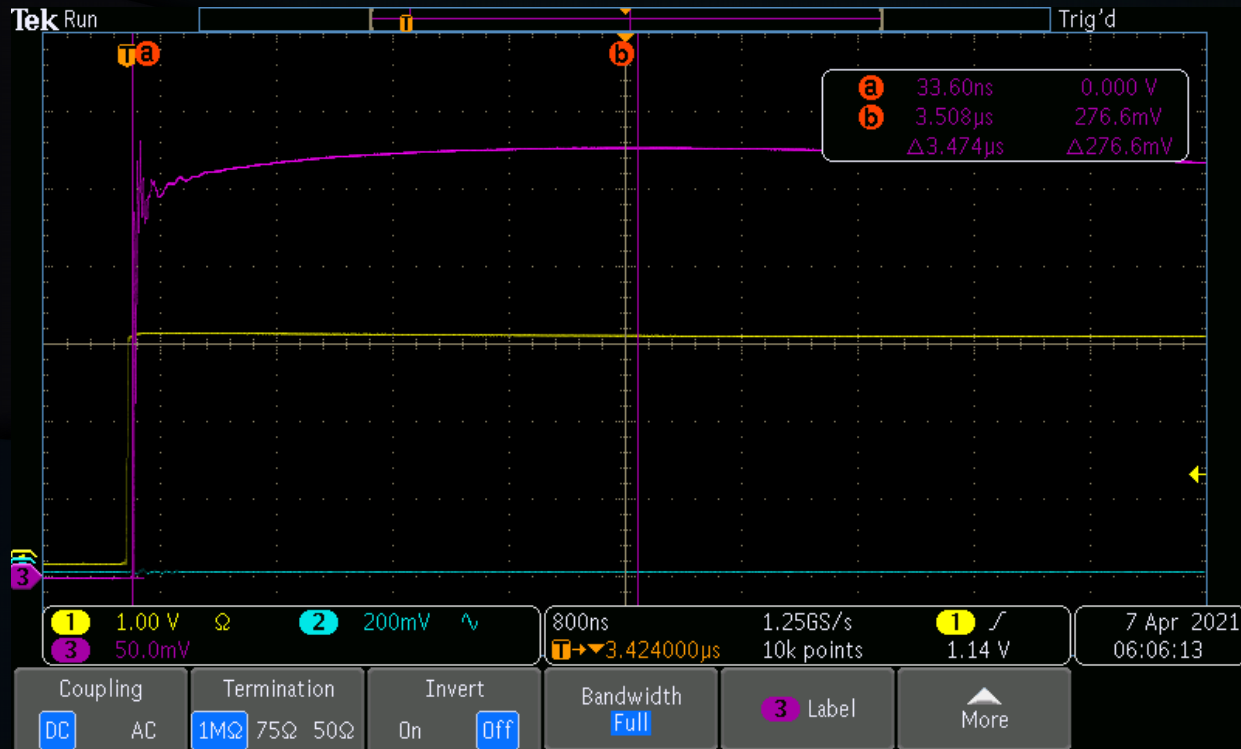
Osc. Probe equivalent circuit

Oscilloscope test, modified HIDRA

■ Simulation vs measurement (40 V PD bias)

Oscilloscope test, dedicated circuit.

- We replicated the simplified circuit of scolopendra + HIDRA board (slide 3)

Conclusion and questions

- The PD signal slow increases with time up to few us

- It is consistent with the observed signal vs casis time with HIDRA.