Timing Status Freiburg

Albert-Ludwigs-Universität Freiburg

UNI FREIBURG

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3D Timing Meeting

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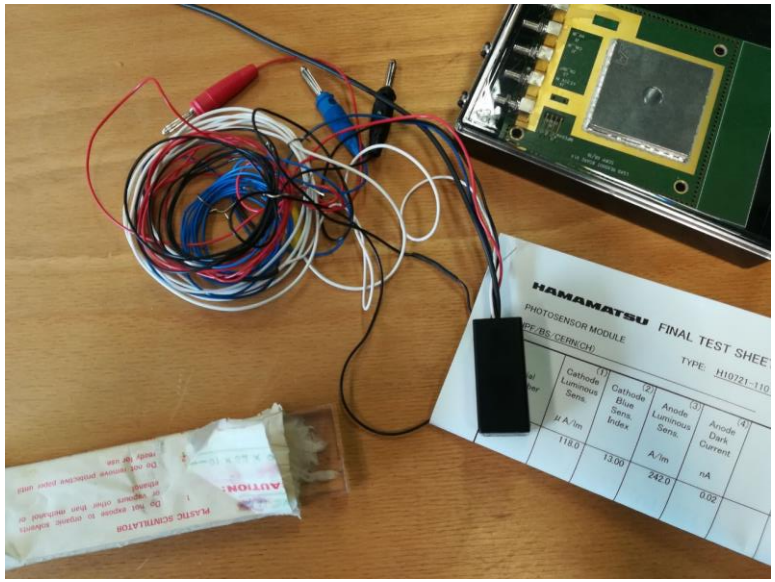
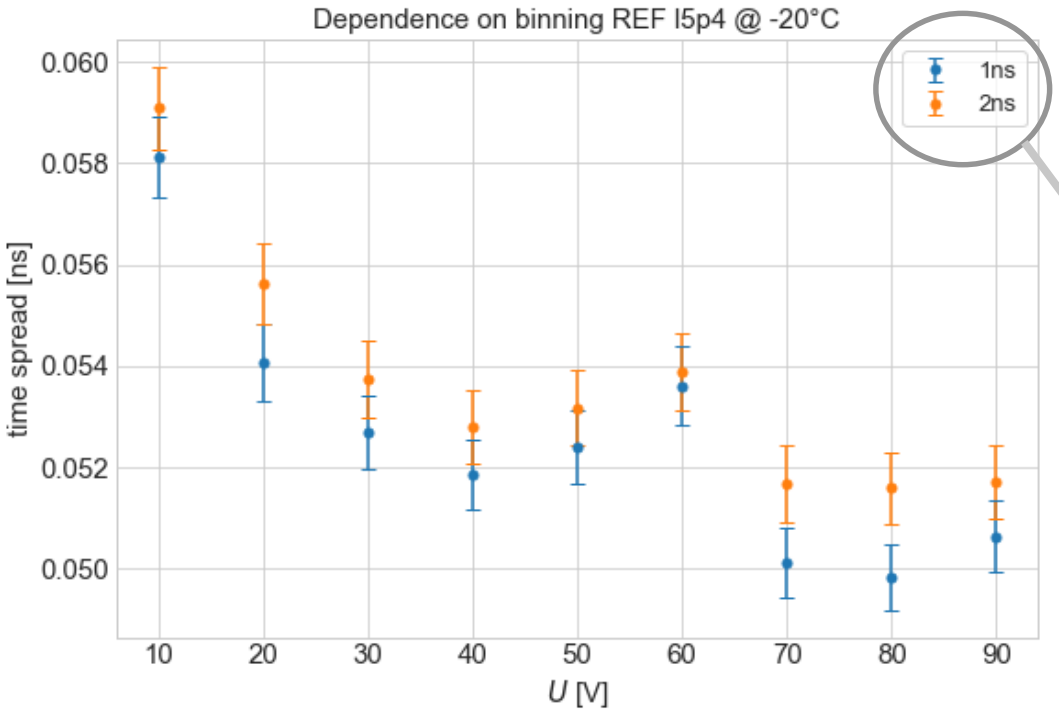
Status

- PMT arrived, connectors and cables attached
- 3D printing for scintillator connection in planning
- Oscilloscope soon to be ordered
- Cooling more stable now



Binning

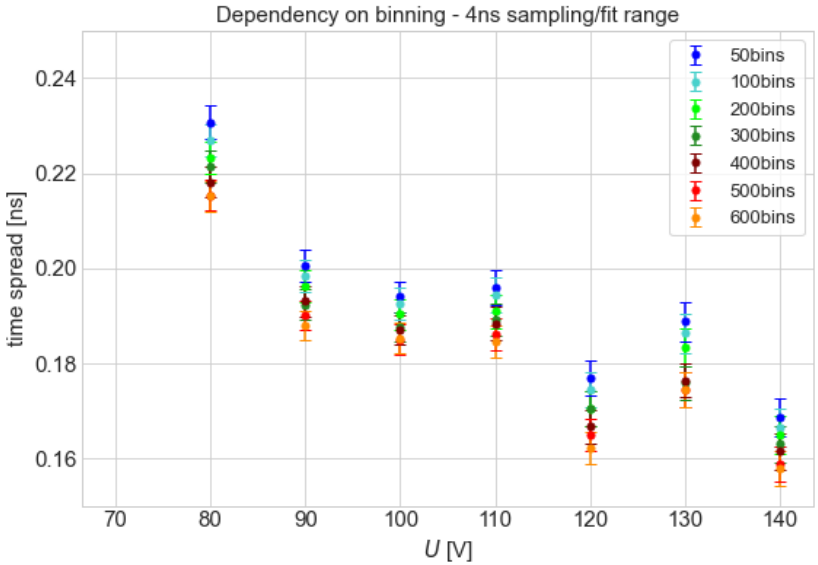
- How do we ensure consistency with our results on the matter of binning/sampling-window? (e.g. noise, jitter, time spread)
- Are you always consistent with binning/sampling ratio throughout different analyses?



DUT 3DStrip 7945
REF HPK w33se3l5p4 (-120V)
500 bins

Sampling window size

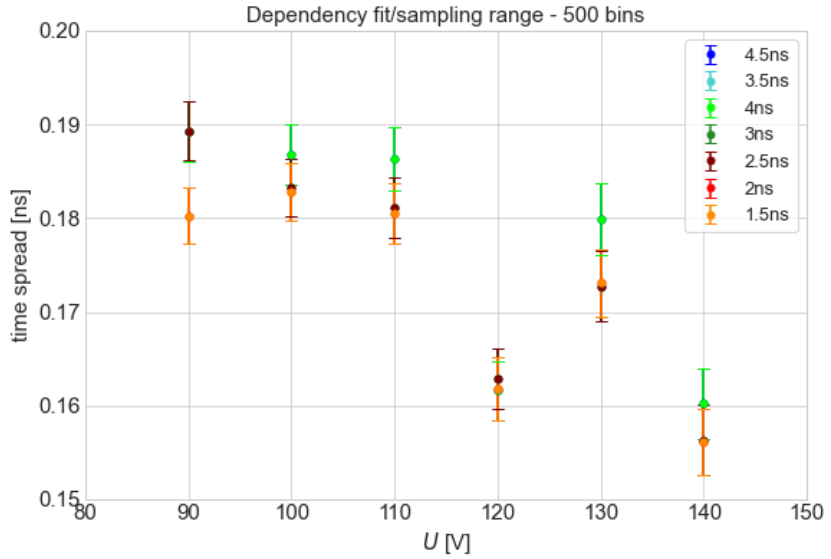
Different binning/sampling ratio

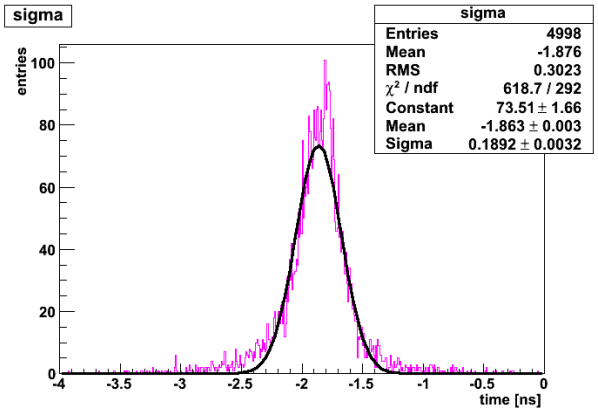


DUT HPK w28se3
REF HPK w33se5 (-140V)

More bins → Lower time spread

But also dependent on size of fit/sampling range



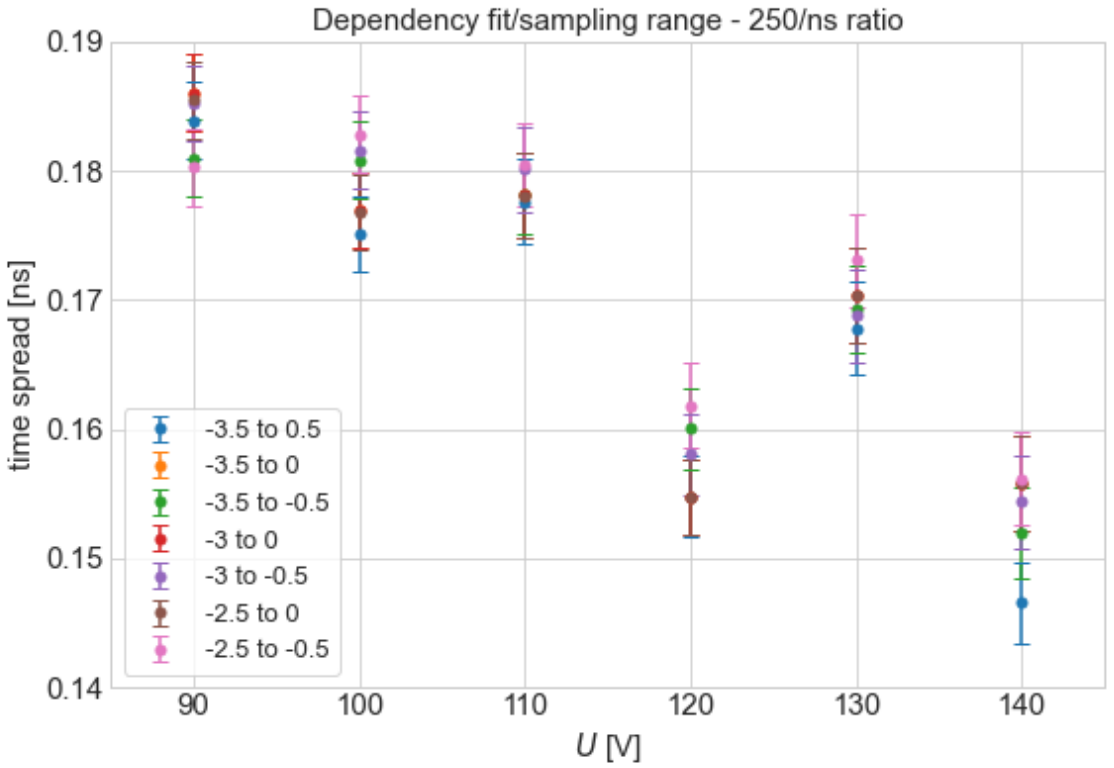


Example: Timespread @ 90V

Different binning/sampling ratio

DUT HPK w28se3
REF HPK w33se5 (-140V)

- Same bin/range size ratio
- Different range
- Inconsistent results



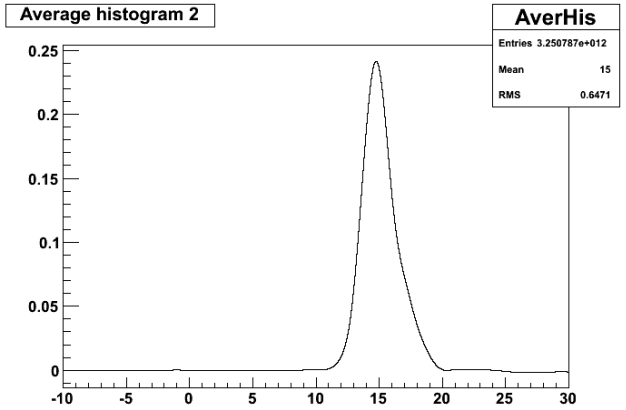
How to ensure precision timing throughout different analyses?

Common Mode Correction ? - TCTAnalyse

```
// common mode correction - offset signal scale to match 0 without signal
    aa[i]->CCmode=1;
    aa[i]->Weight=0.001;          /////   -->>> polarity + for n, - for p
    aa[i]->cm_maxt=-8;
    aa[i]->cm_mint=-10;
```

From AnalizaTiming.C

- = Pedestal Correction?
- Weight?
- Ideal values for cm_maxt, cm_mint ?



Averaged LGAD signal