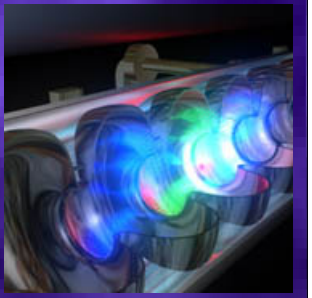

Electro Optic Sampling at TTF2
- Recent results -

Bernd Steffen

DESY

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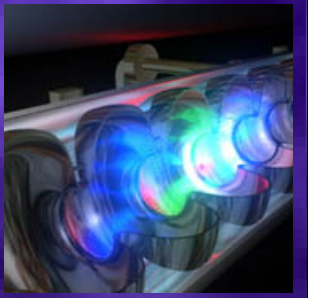

Overview

- First Scans
- Spectral decoding
  - Arrivaltime jitter
  - Charge dependence
  - ACC1 Phase dependence
- First GaP tests

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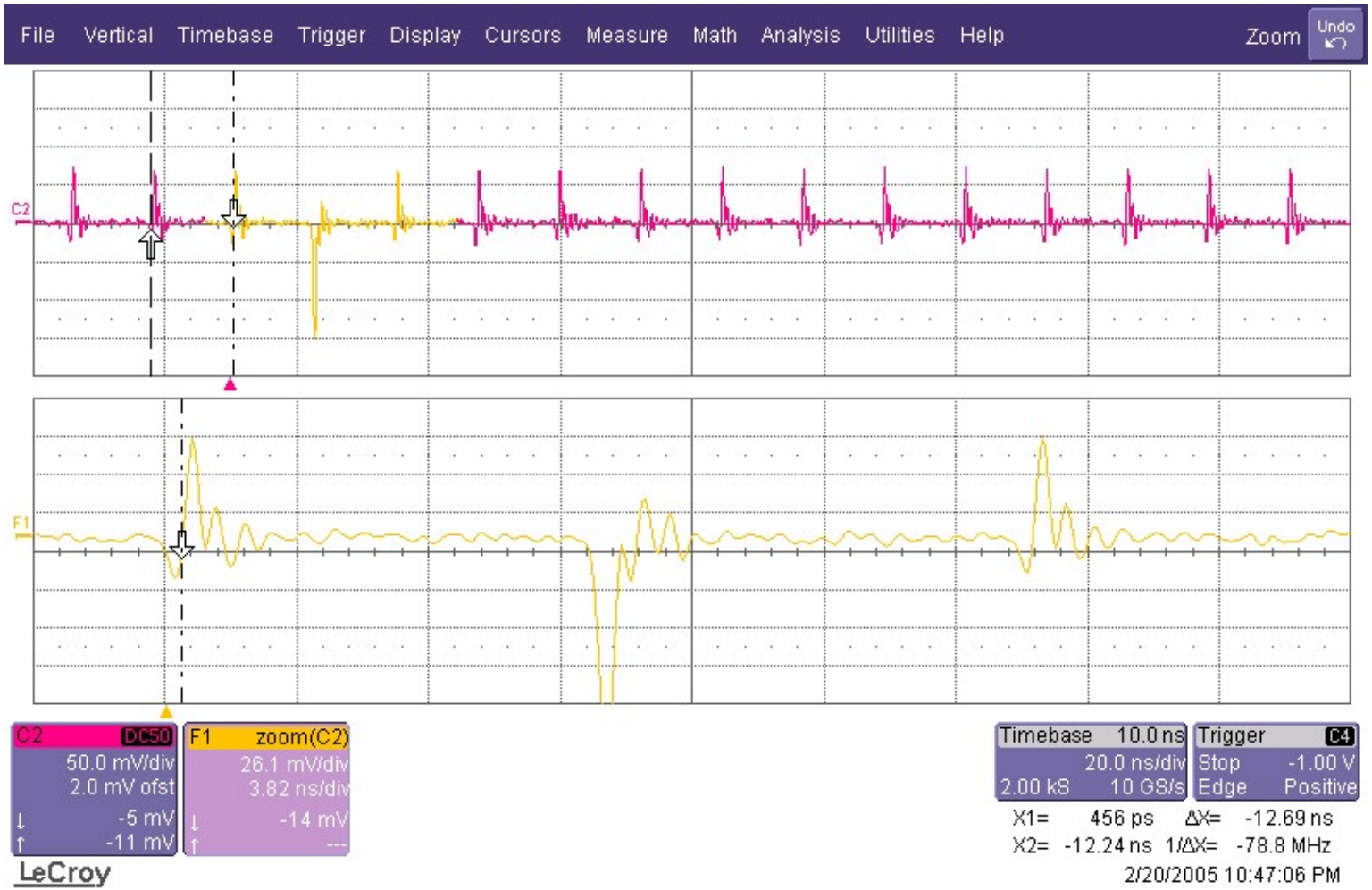
First EO-Signal Feb. 05



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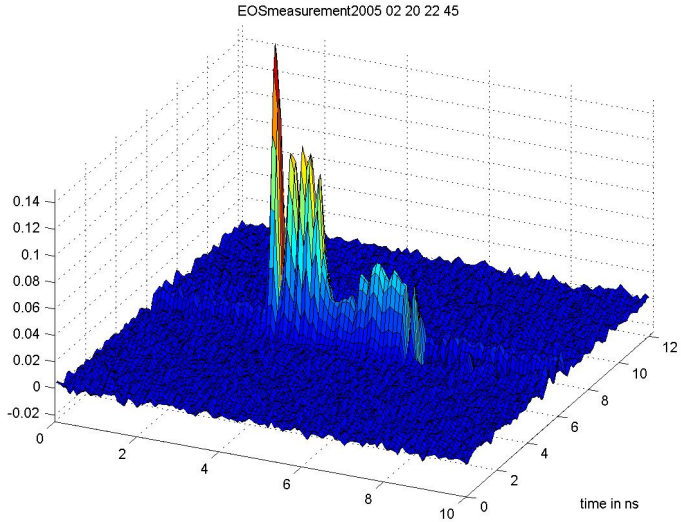
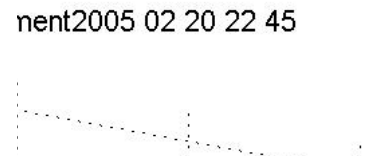
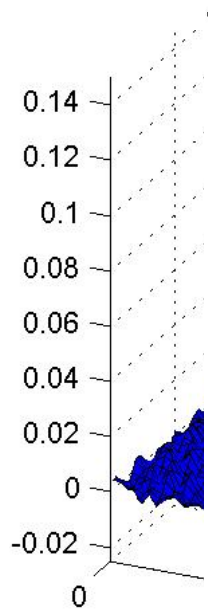
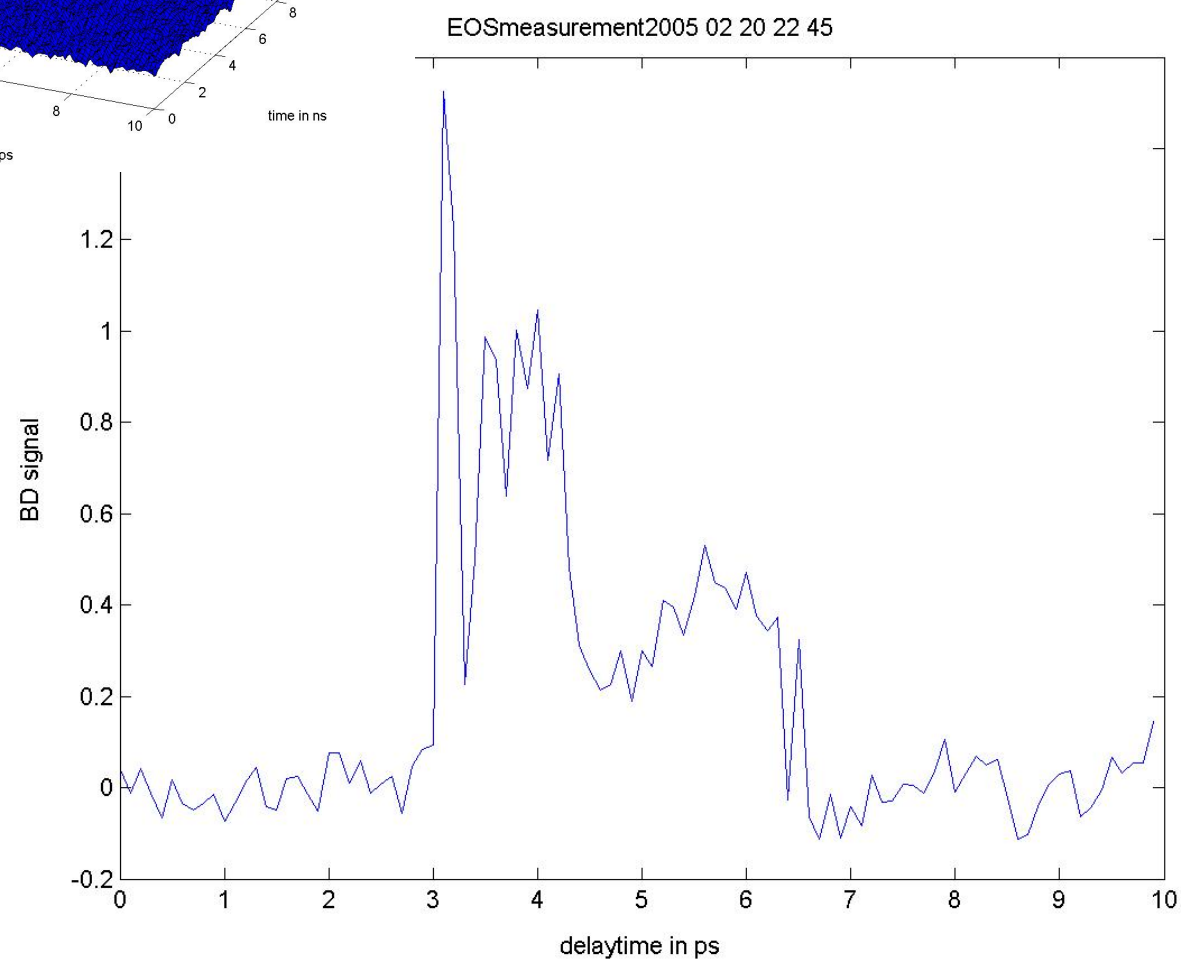
First Scans









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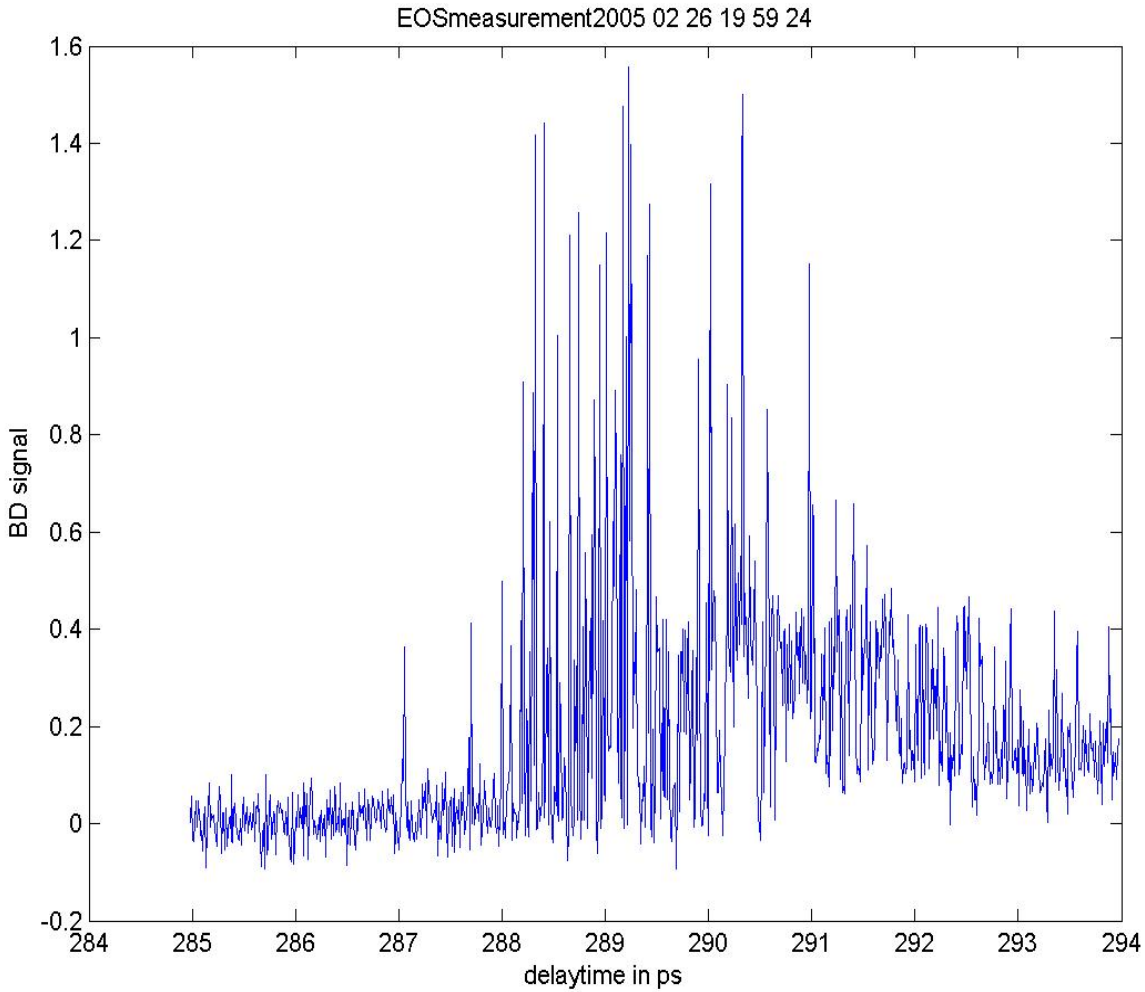
First Scans

No bunch profile detectable due to time jitter. Need for single shot measurement!



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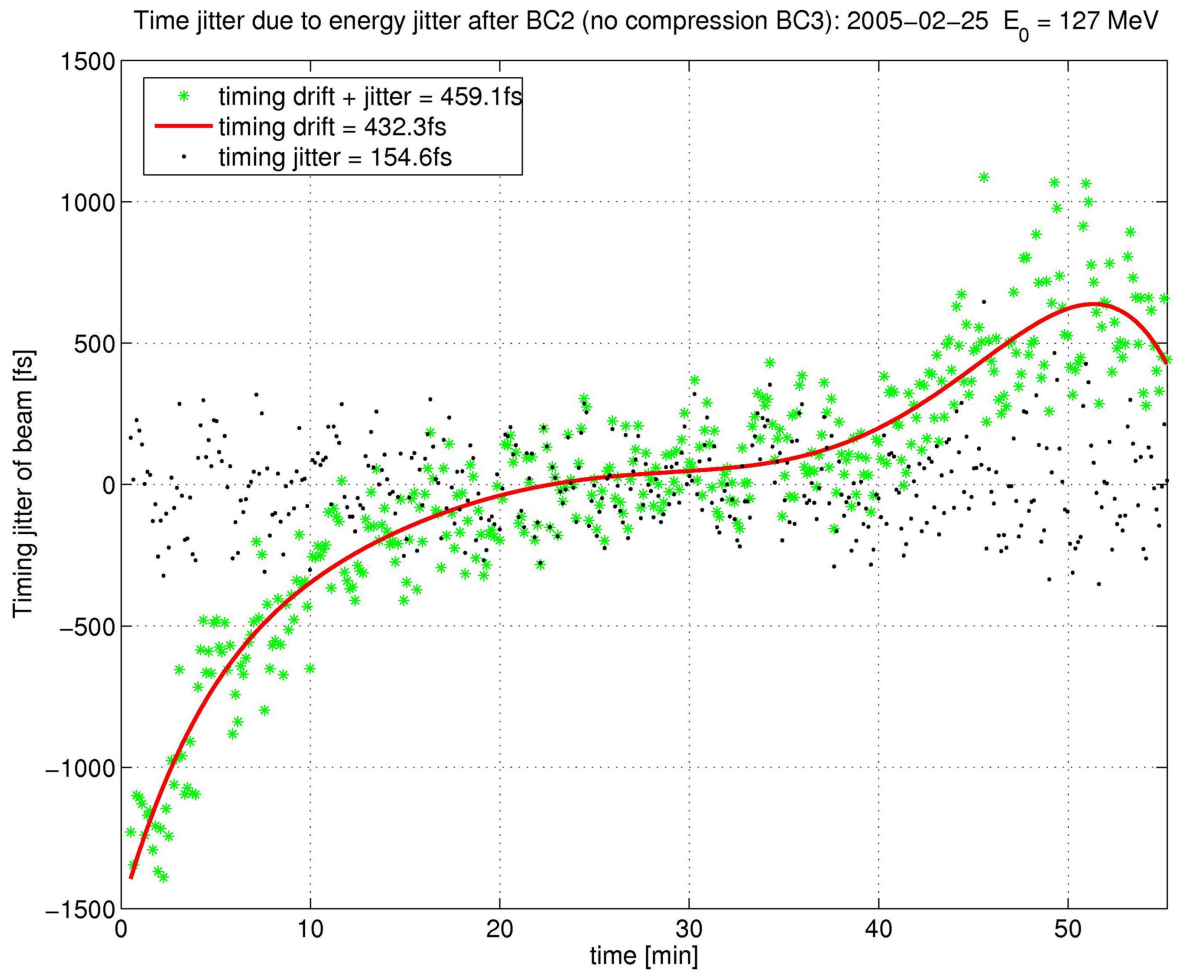
Sources for time jitter:

energy jitter in the bunch compressors



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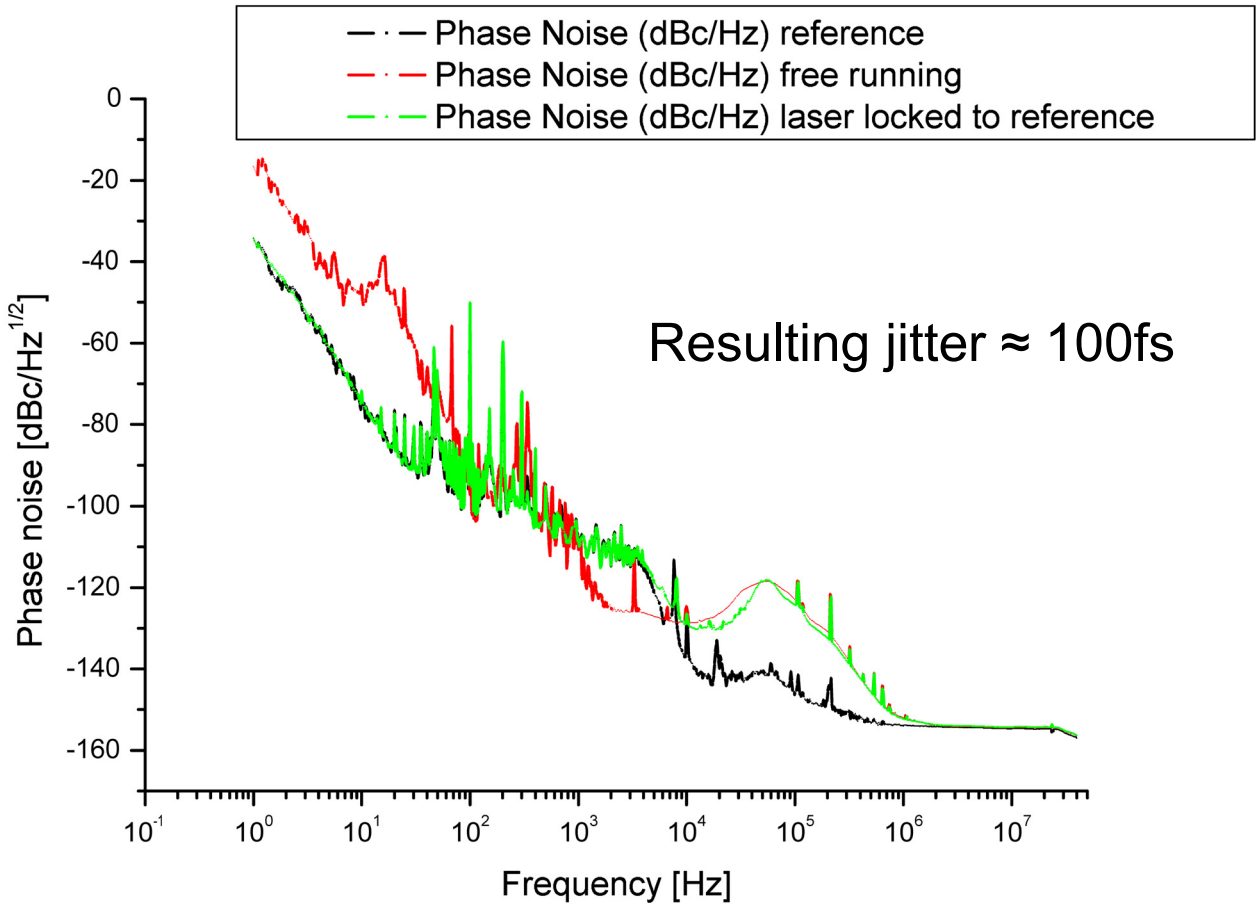
Sources for time jitter:
laser synchronisation



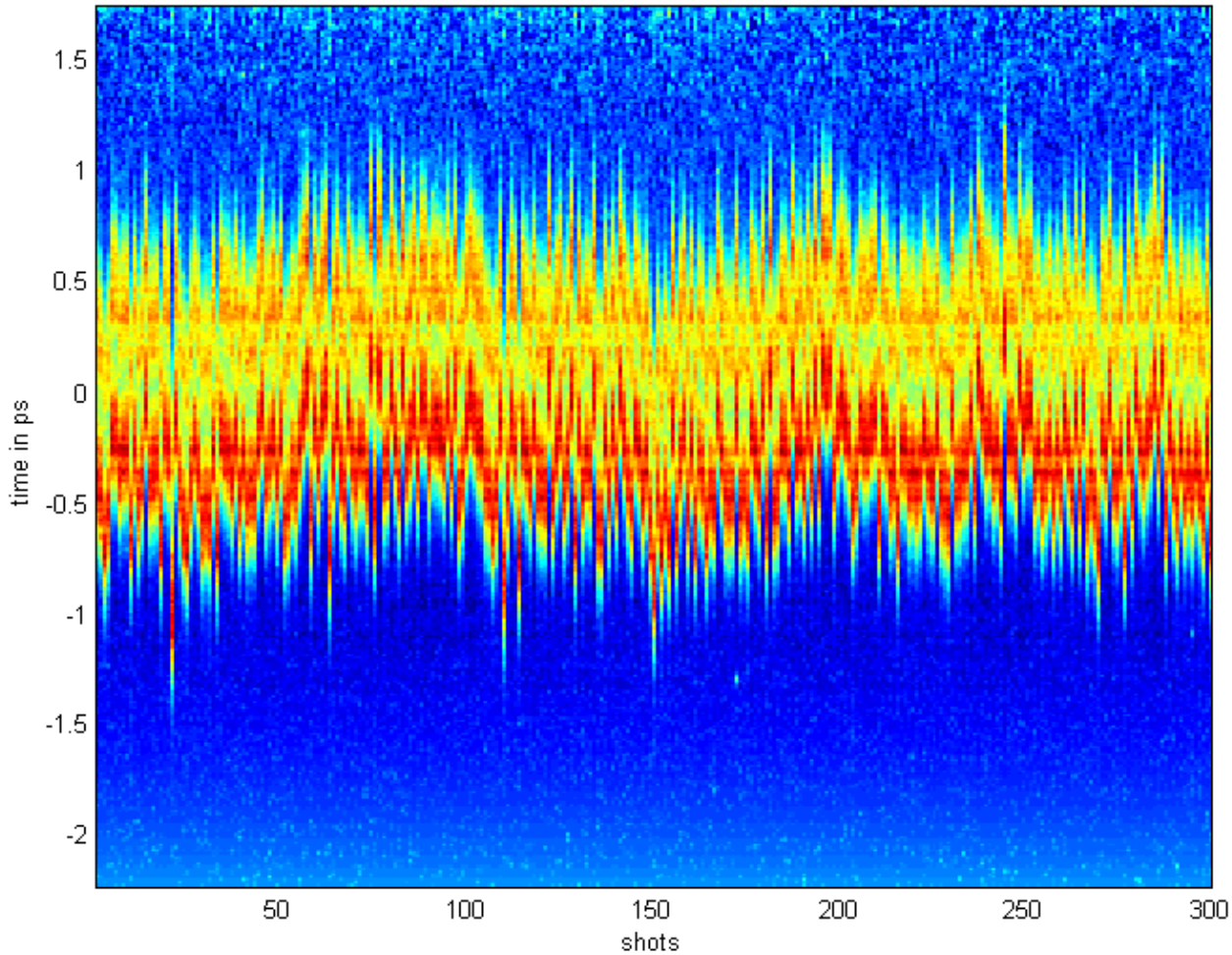
Resulting jitter ≈ 100fs

Spectral decoding

300 consecutive bunches on June 5th,

off crest,

1 nC



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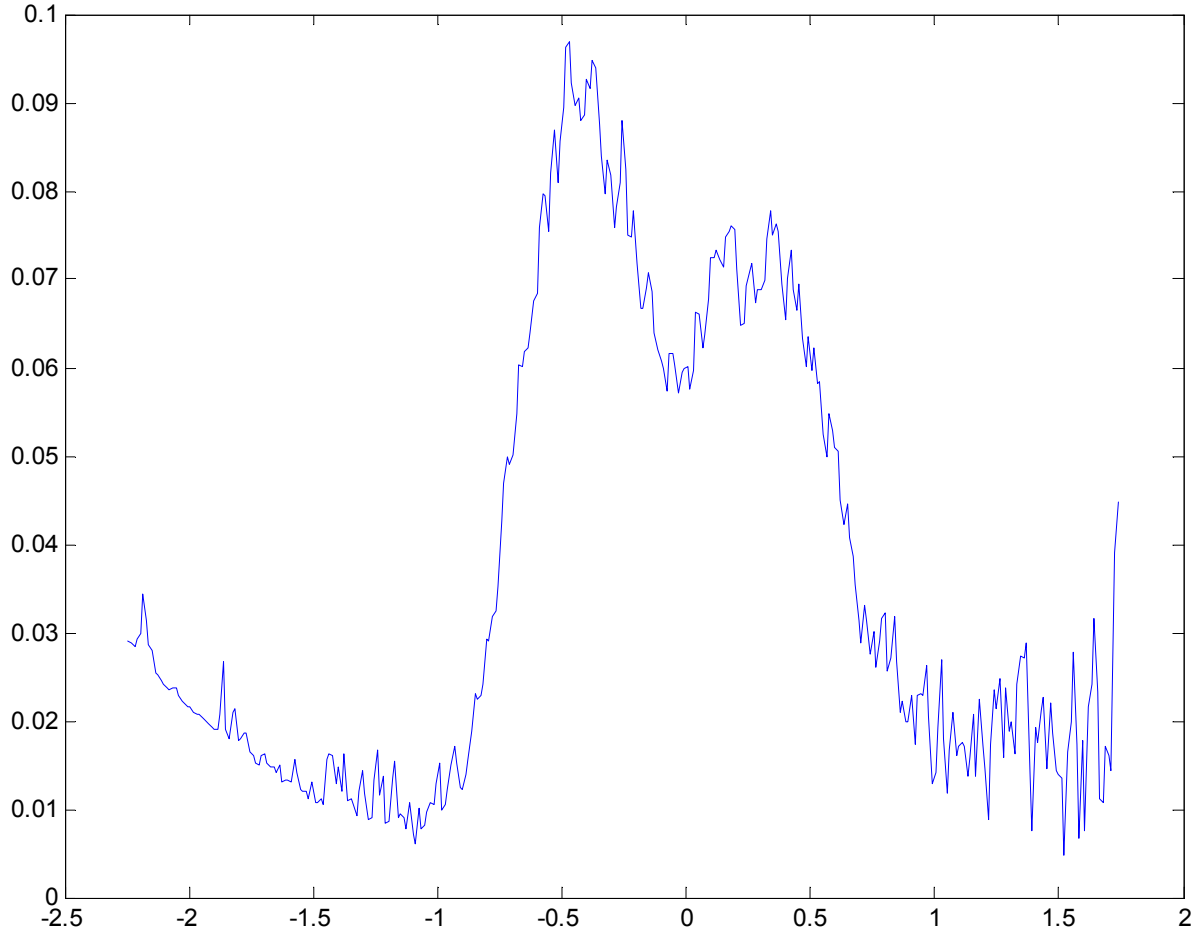
Spectral decoding

Peak separation approx. 650fs,
first peak 650fs (FWHM)



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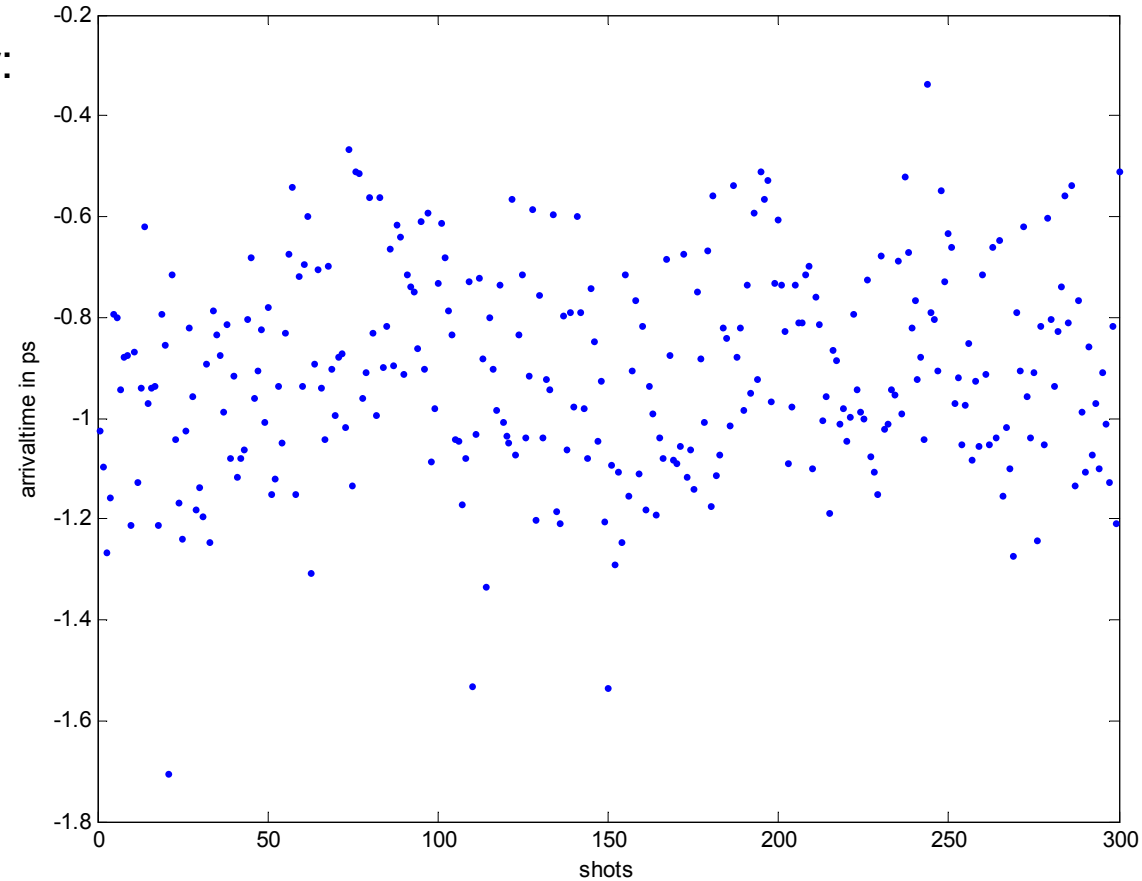
Arrival time of the bunch from EOSD data

Arrivaltime jitter:
200 fs (rms)



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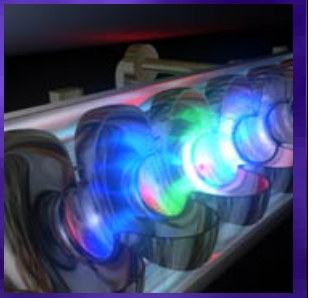
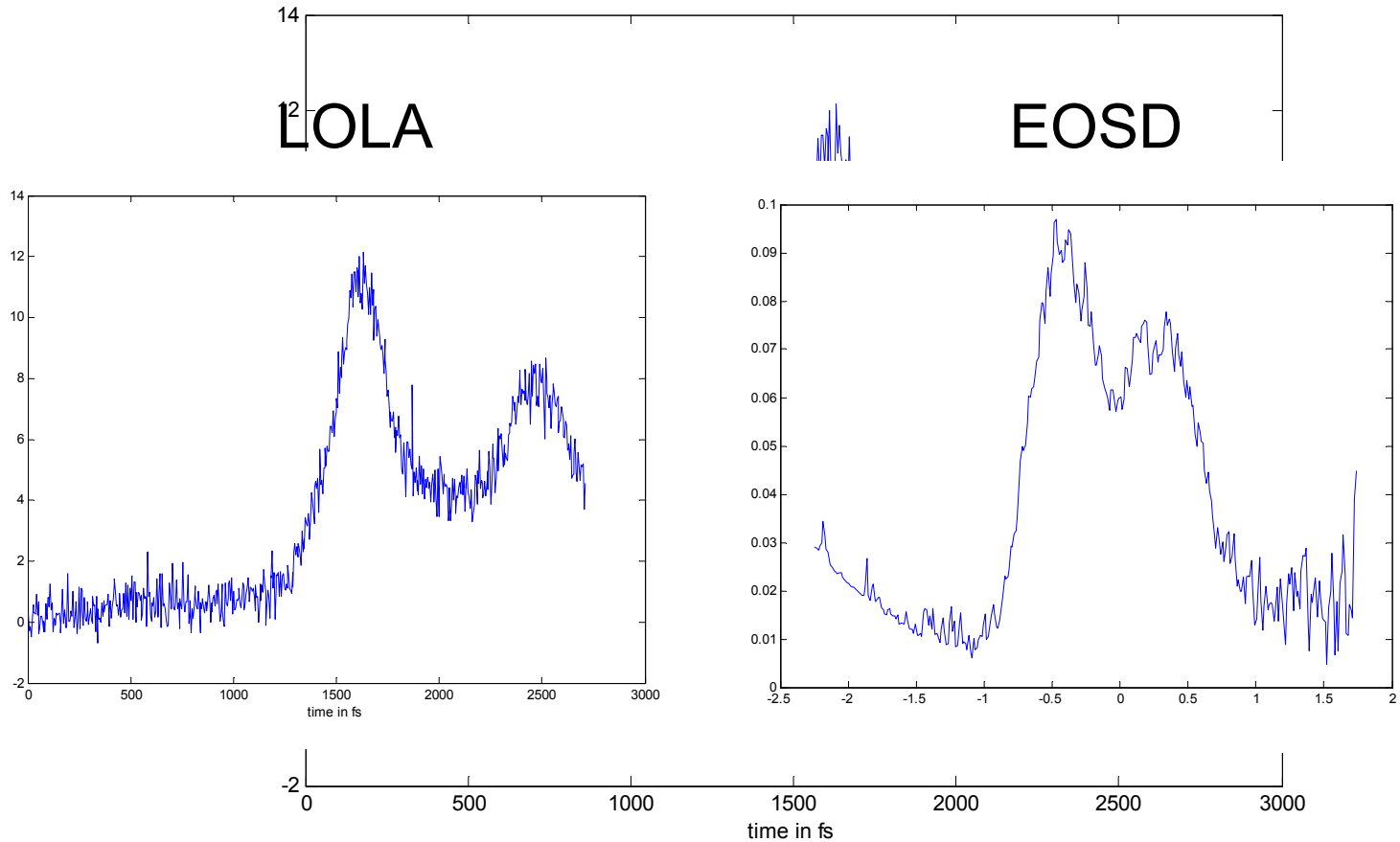


LOLA

Peak separation approx. 900fs,
first peak 350fs (FWHM)



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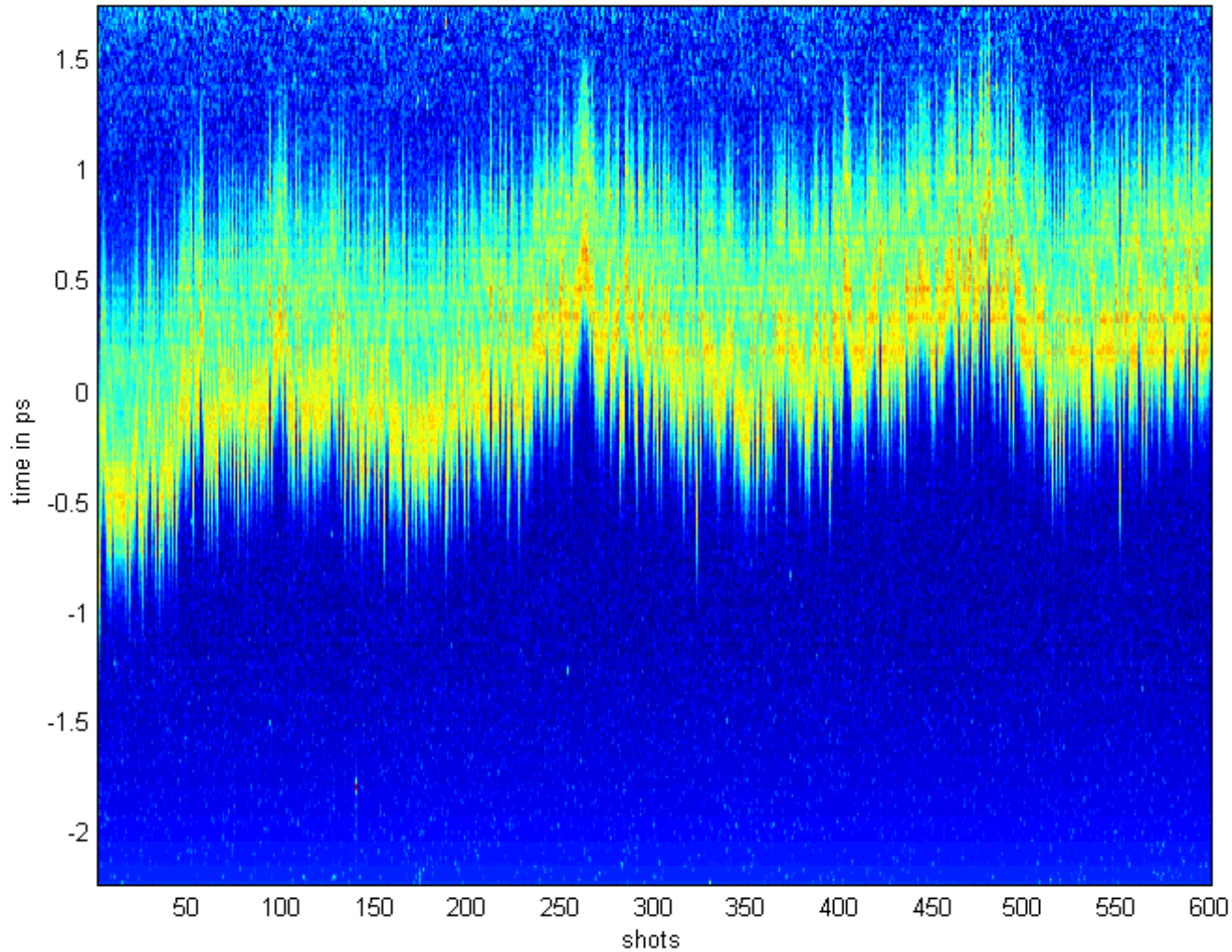
Spectral decoding



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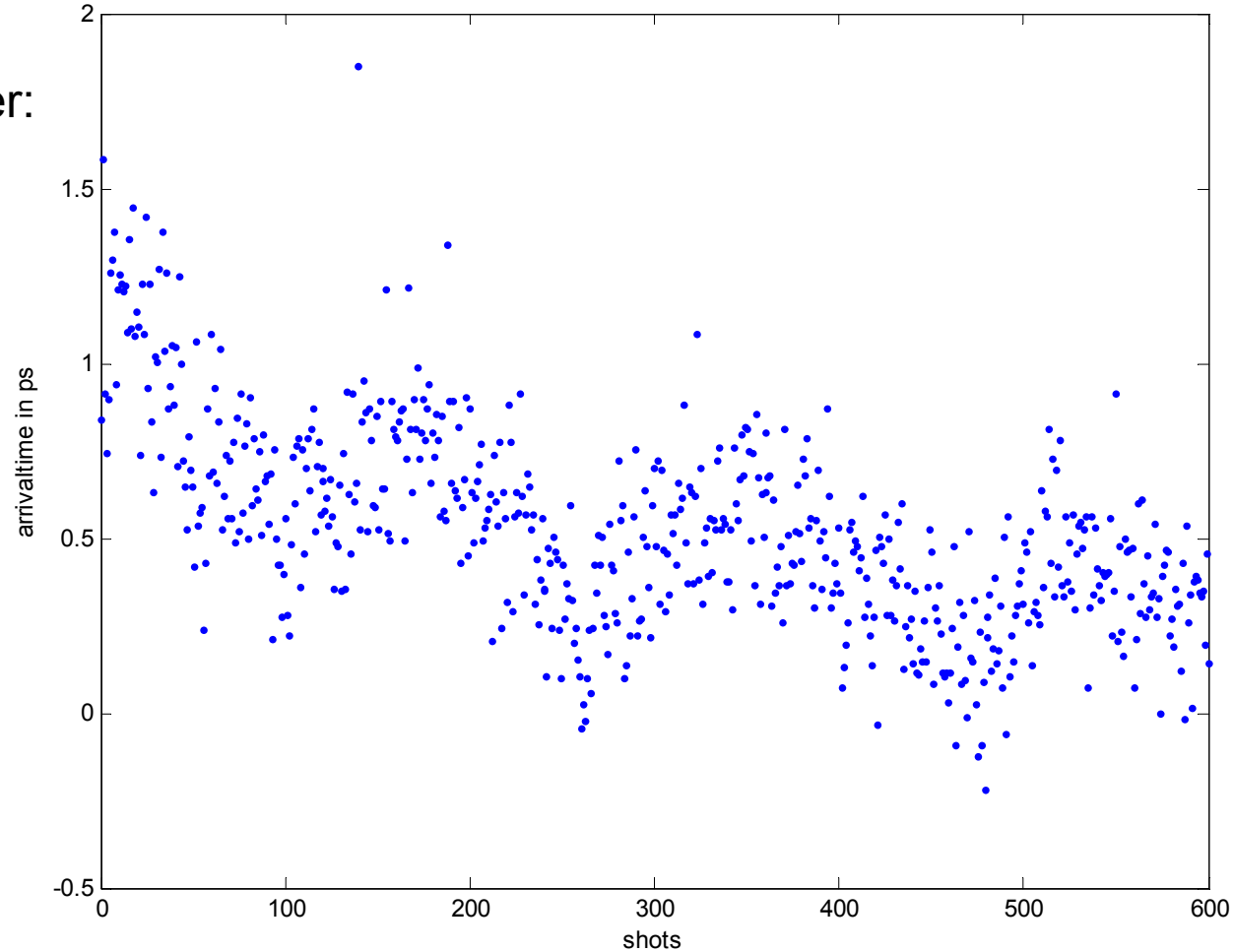
Arrival time of the bunch from EOSD data

Arrivaltime jitter:
530 fs (rms)



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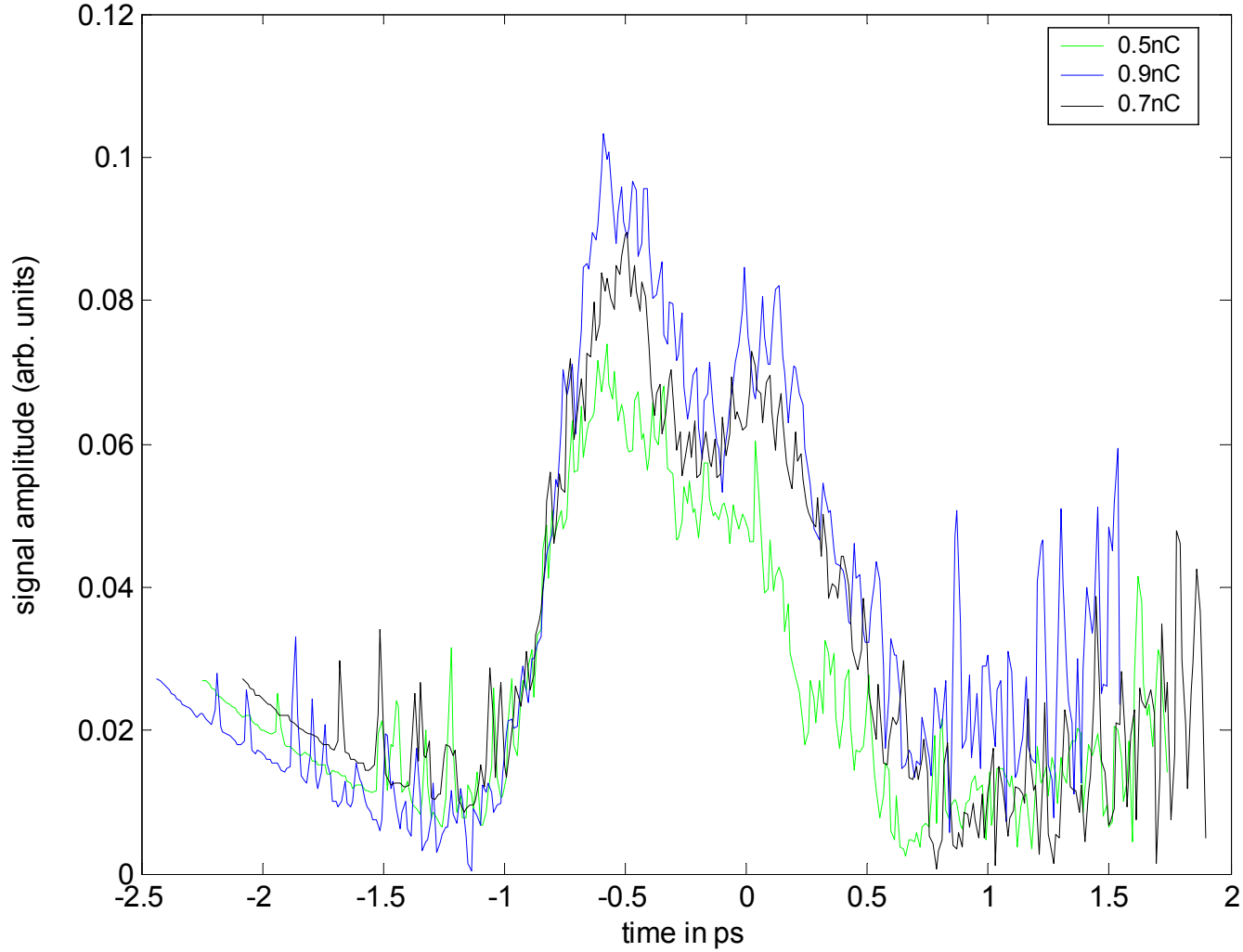
Signal dependence on bunch charge



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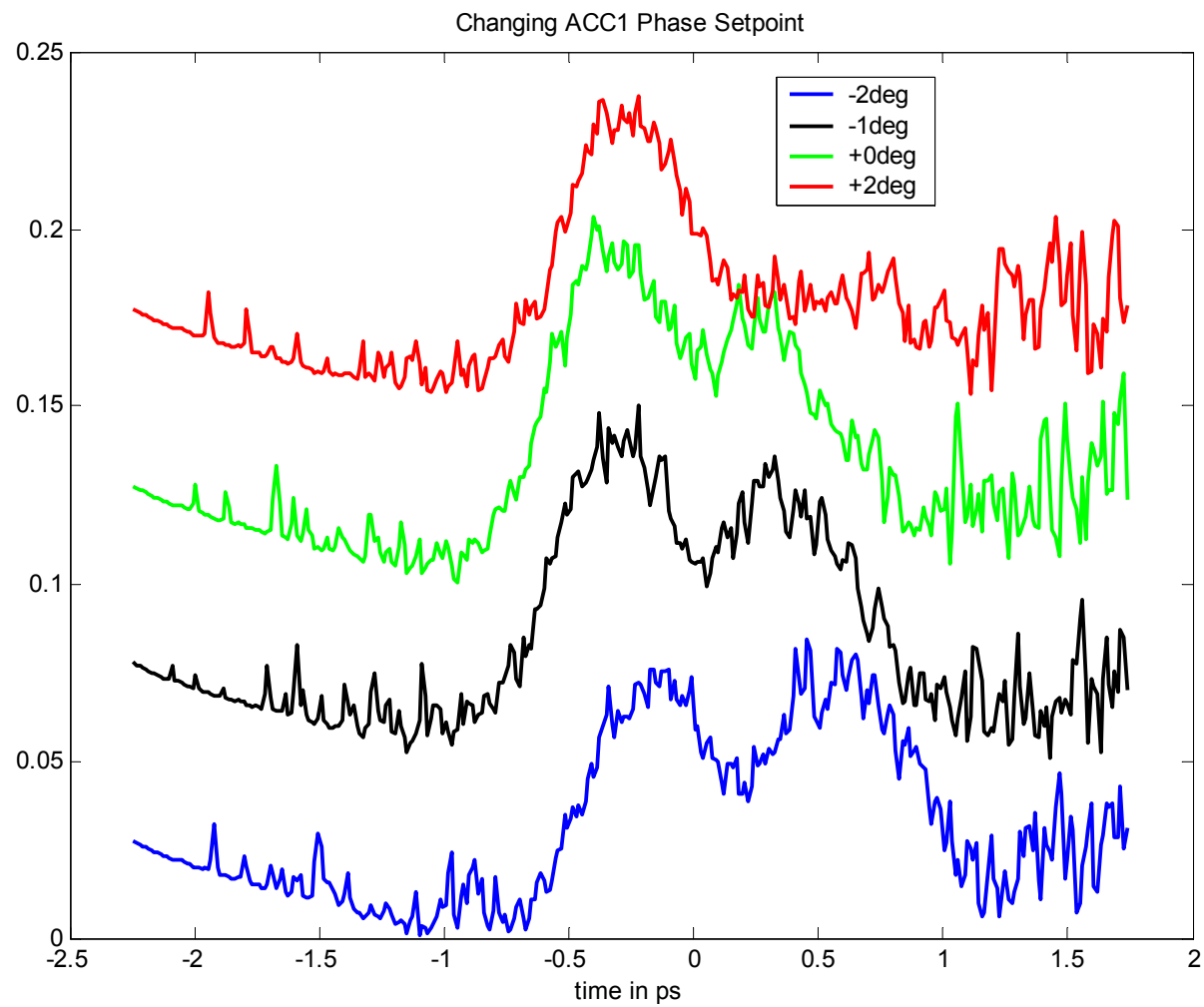
Bunch shape dependence on ACC1 Phase



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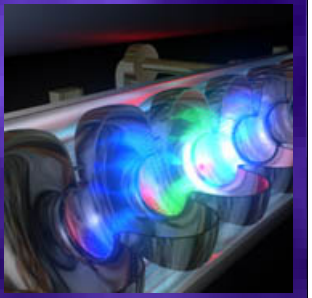
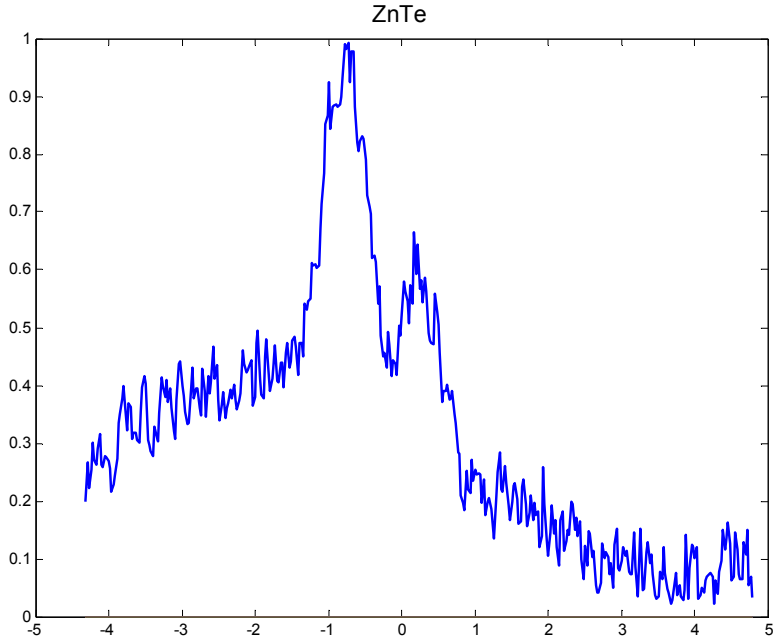
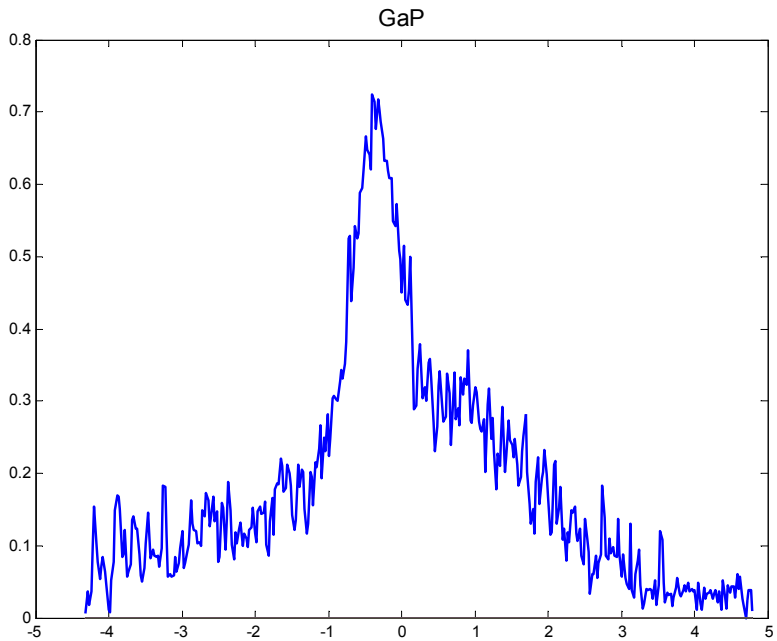


First tests with GaP

ZnTe:
r=14mm
d=100µm



GaP:
r=10mm
d=100µm



Time calibration was not possible due to an unstable arrival time: need of an independent time calibration!

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