

LHC Mini Workshop

- Improving the accuracy of the BCT measurements -



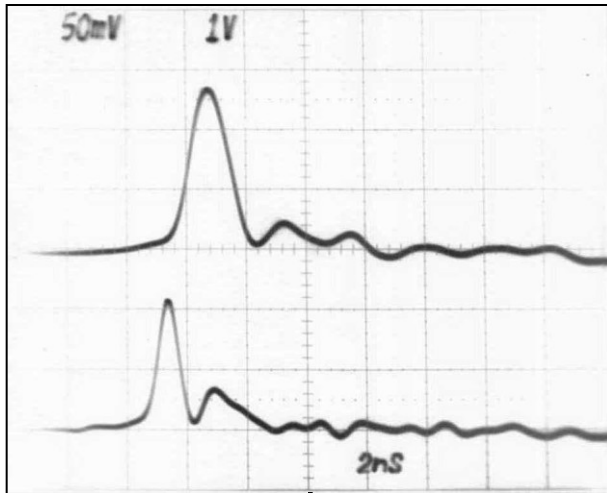
Experience with the FBCTs at GSI

(revised 9. 1. 2009, 10. 01. 2011)

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Addendum: FBCTs at GSI

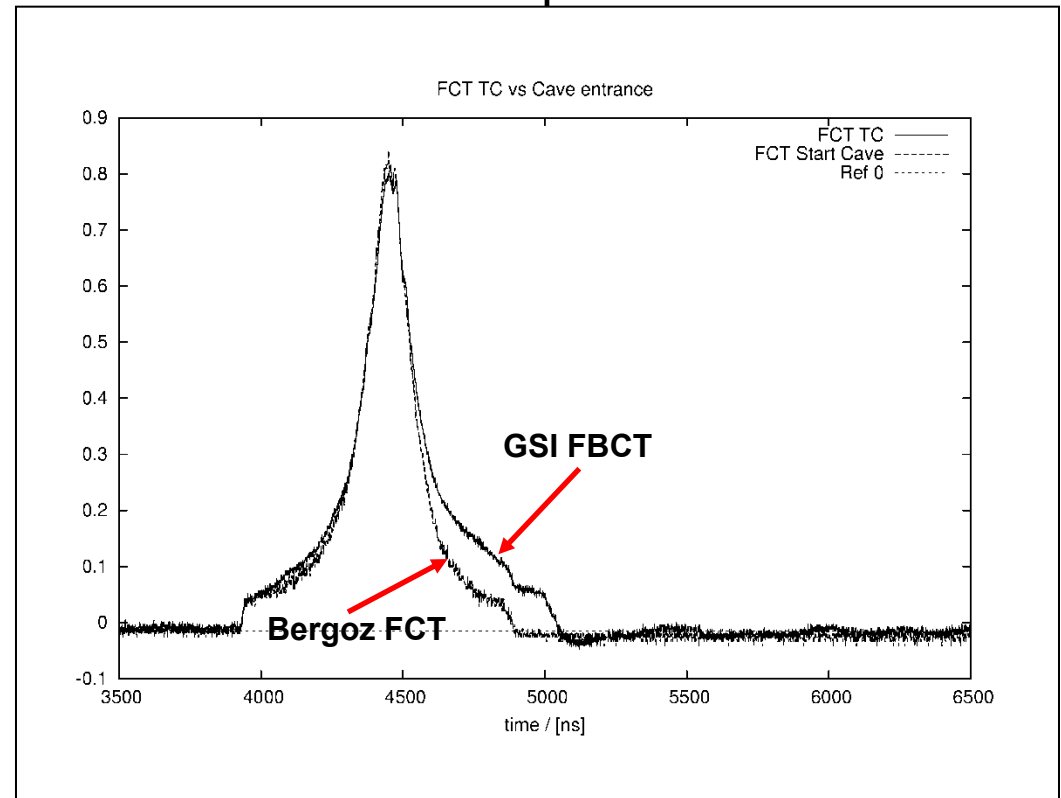


Pulse response of GSI FBCT toroid, used in the SIS extraction line and experiment caves; (V6025F core with 10 - turn transmission line winding)

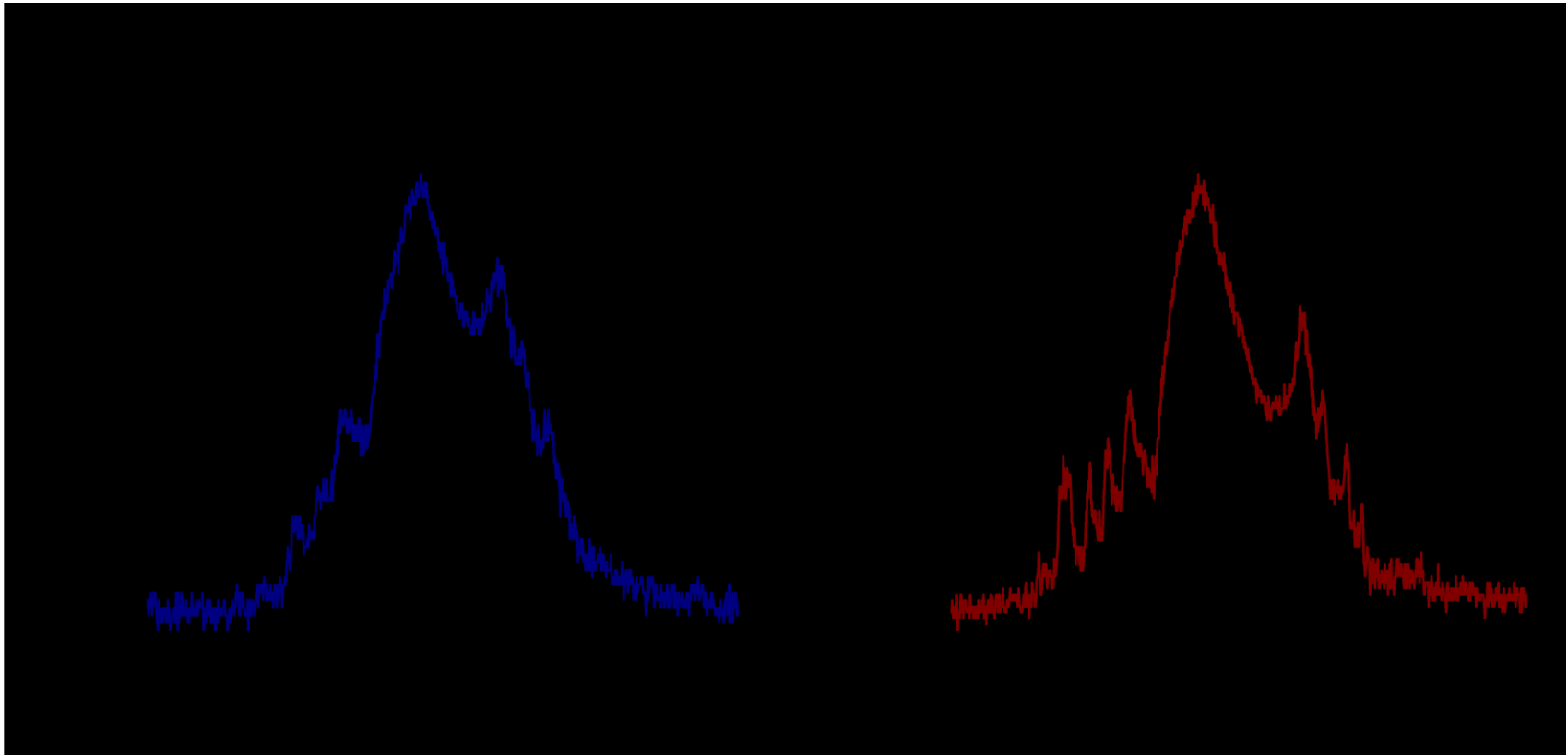
- Bottom trace: input
- Top trace: output

Sensitivity: 4.2 mV/mA into 50 Ω

Comparison of GSI and Bergoz FBCT signals; data from Alexander Hug, Plasma Physics Exp. (HHT)



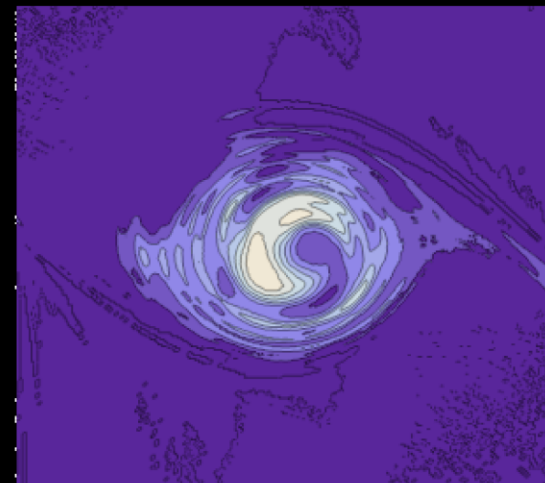
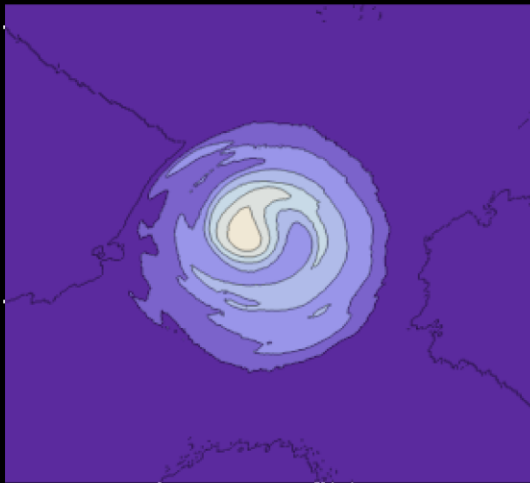
SIS: Raw data from the Bergoz FBCT



FBCT signal was amplified by 20 dB (miteq AM-1422) and digitized a 500 Ms/s ADC via ~100m HQ coax cable
No further signal processing is foreseen, but signal fidelity will be improved by optical fiber transmission.

Ref.: Chorniy, O. - RF Manipulations in SIS18 and SIS100 - , GSI 2010

SIS: Bunch tomography with FBCT



! Improved phase space density resolution.
More exact value of the rms emittance

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