Controlled Transverse Blowup with ADT "plan" for MD block #3 / 2011

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Motivation and procedure
for transverse blow-up with ADT (1)

➢ efficient procedure for transverse loss maps

- spec: loose equivalent of one nominal bunch on timescale of 1s → 10s
- needed at 450 GeV and 7 TeV
- time-gating to target individual slices of beam (no need to re-fill for a 2nd map)
- 1 fill with 10 probes for setting-up during the MD
- 2 x fills with 12 nominal bunches (two schemes are proposed) for demonstration
- evaluate feasibility to do loss maps with this technique on full beam

restrict MD to 450 GeV, maximum intensity 12 nominal bunches
gating to be checked with 10 probe bunches

Motivation and procedure
for transverse blowup-up with ADT (2)

➢ **aperture measurements**

- use single probe beam with 1×10^{10} per bunch
- restriction to 450 GeV only ?
- slow and smooth blowup → white noise, full spectrum thought to be best
- observe losses around ring → identify aperture limit
- at regular intervals wirescans to monitor the emittances → quantification
- no gating required
- estimate: 1 hour per beam and plane, allocate 2 hours to aperture measurement
- may not have enough time in this MD for all planes and beams

Preparations so far

(D. Valuch, M. Jaussi, D. Jacquet)
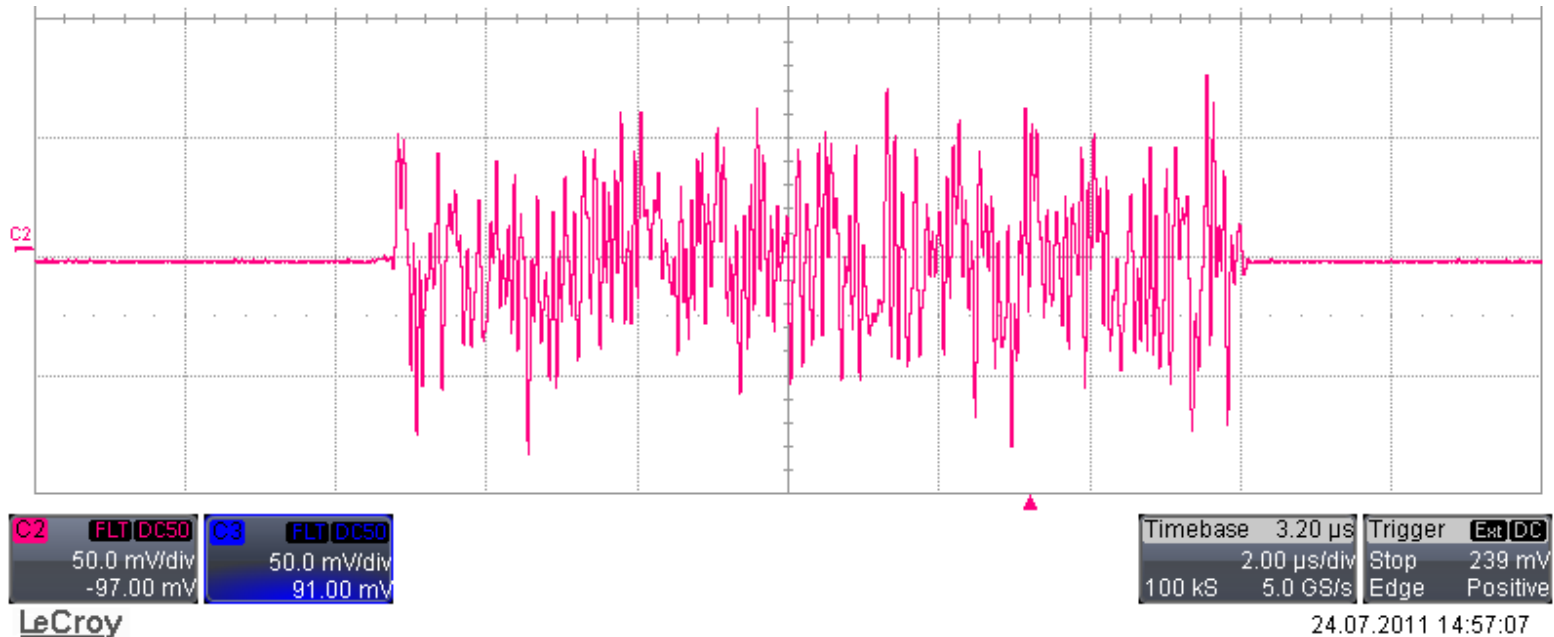
white noise deployed on 1 damper, ready to test (need to test before MD)
band limiting under test a) low-pass   b) band-pass
band limitation will be used for loss maps → better use of available power
gating implemented on FPGA → software interface to be finished (testing !)
          (gating is similar to abort gap cleaning, i.e. a "copy")