CERN contributions to ATF2

R. Tomas

CERN

CERN-LAPP ground motion sensor system

- LAPP bought 15 sensors

  (A. Jeremie et al)
- CERN puts the DAQ

  (Kurt et al)

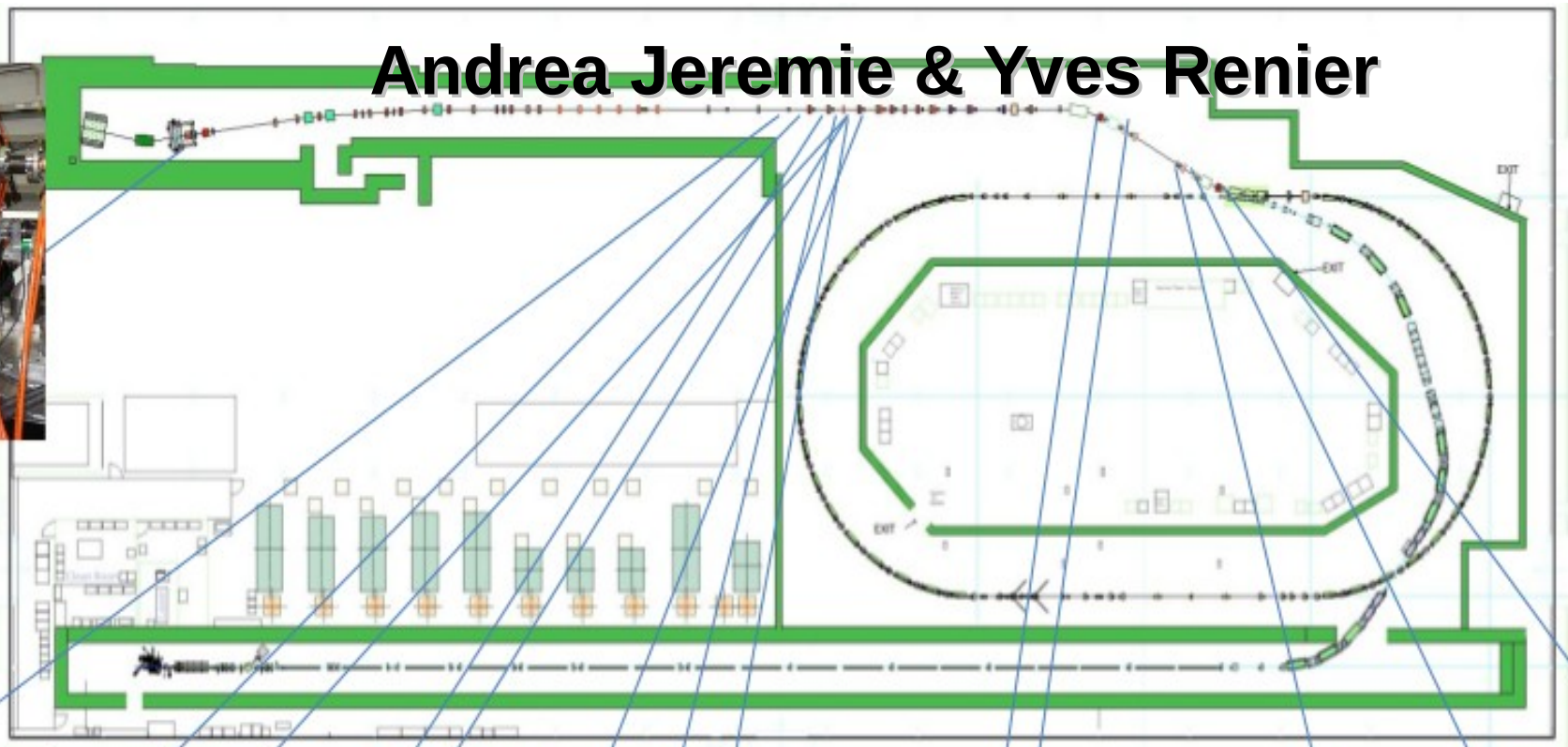
  and the simulations

  (Yves et al)
- System commissioned in Annecy
- Equipment already operational in KEK

Andrea Jeremie & Yves Renier

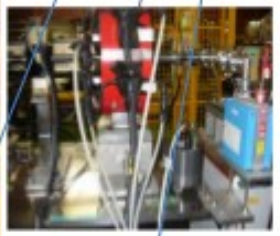
QD0FF

QF19X



QD18X

QD16X



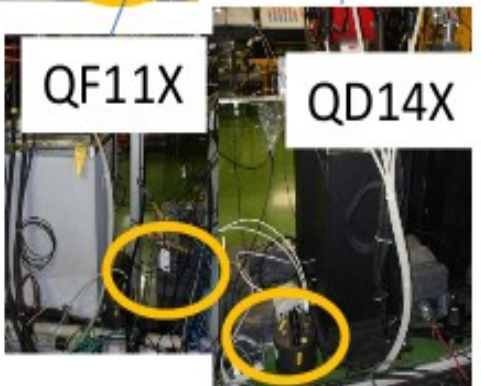
QF15X

QD5X

QF1X

QF13X

QD12X



QF11X

QD14X

QF4X

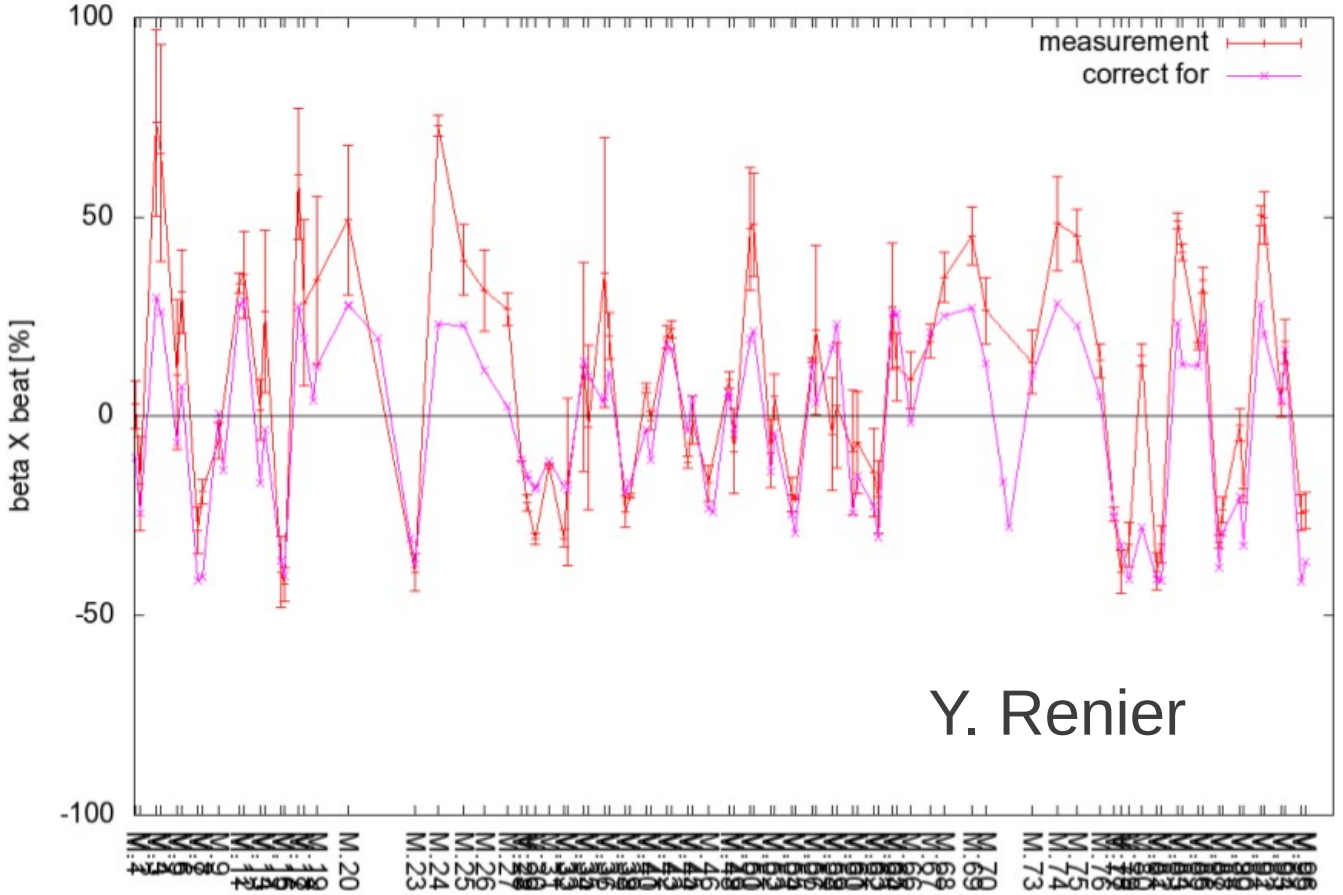
QF3X

QD2X

CERN contribution to commissioning

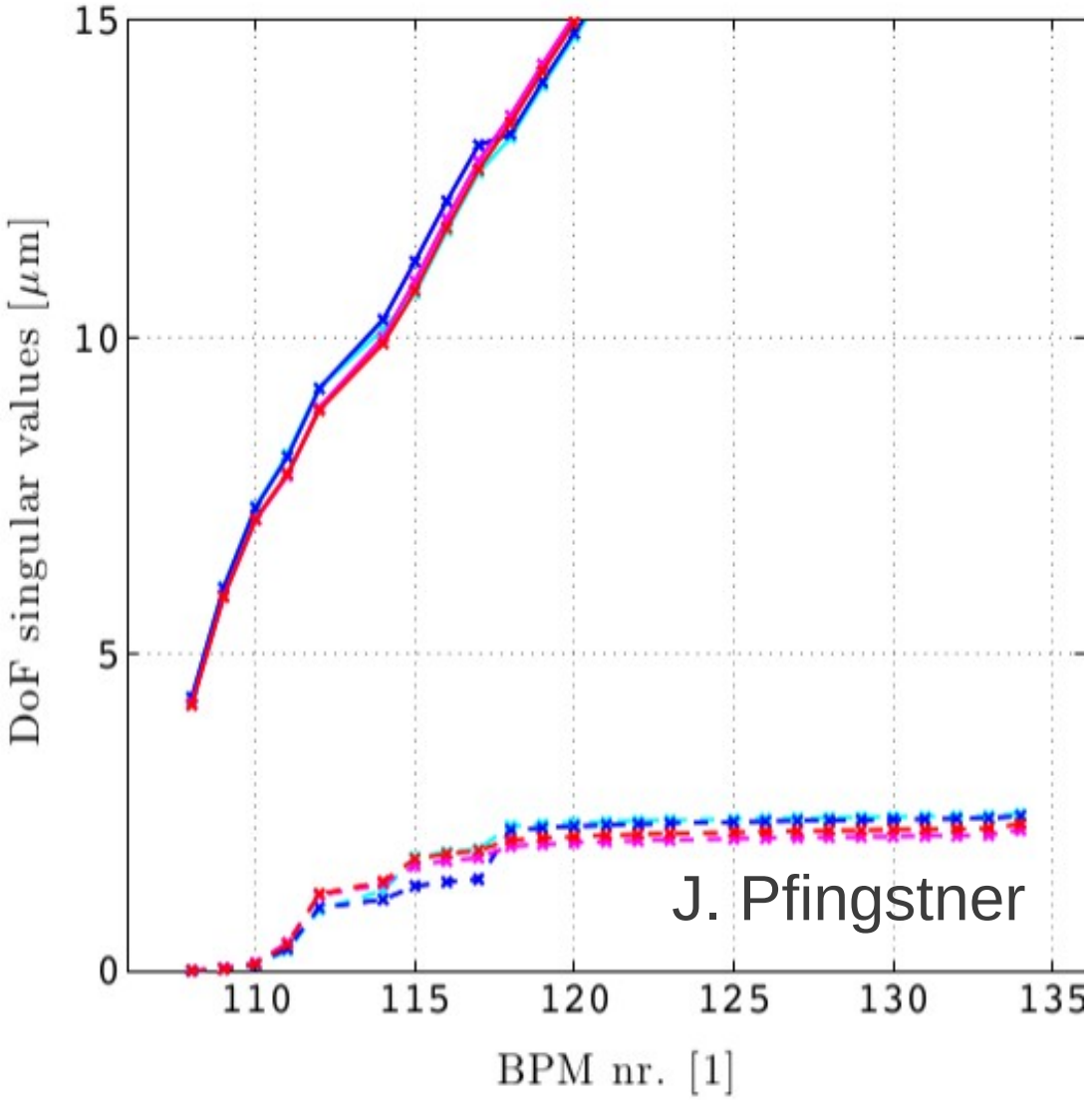
- Hector, Juergen and Yves joined the December commissioning
- They also carried out parallel studies:
  - Damping ring optics, Yves
  - Jitter source identification, Juergen and Hector
- We should think on how to continue this activity, Yves and Hector leave in 2013, Juergen leaves ~June 2014.

DR optics measurement and corrections



- Successful measurement and computation of corrections. Need DR time to test corrections.

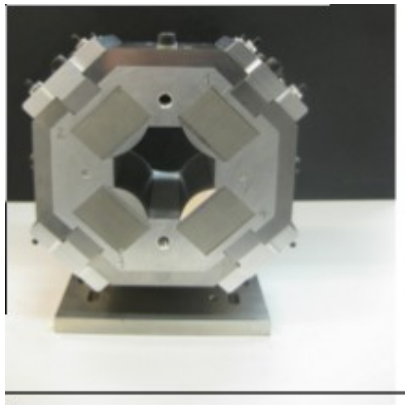
Jitter source identification



- Motivation:Measured beam size + GM experiments
- 20%σ jitter source has many candidates, need better BPMs in EXT
- 2 Quads candidates as sources of 5% of the jitter
- Tests on-going

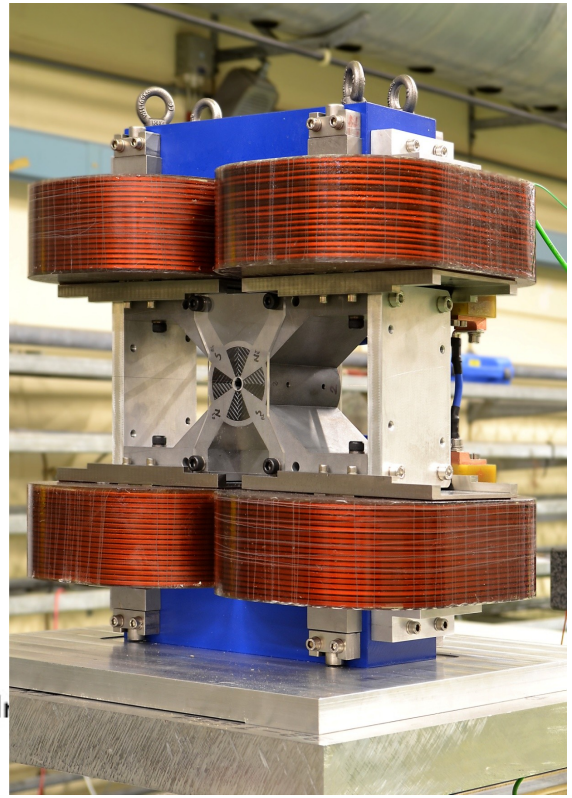
Ultra-low beta* and new QD0 based on CLIC technology?

- Current QD0 is OK for nominal ATF2 optics
- For ultra-low beta* there are 3 options:
  - Increase beta_x → σ_y = 23 nm
  - Replace QD0 → σ_y = 26 nm



Permanent Material Magnet:
Aperture: 40 mm
Dimensions (h-w-l): 220x220x455 mm
Effective length: 474 mm
Gradient: 6.8 T/m
Tuning: 13%

‡A. Vorozhtsov et al. Design, manufacture and measurements of permanent quadr



- ***New!*** 2 new octupoles→ σ_y = 25 nm See Edu's talk

CERN future support for ATF2

- We hope for new post-doc and PhD student for fall 2013 (need fast learning, candidates?)
- Should CERN increase contribution to commissioning? How?
- Magnets for Ultra-low beta* under consideration
- Addendum to existing MoU under consideration