



Betatron Phase Single-p



Ir

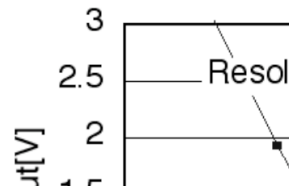
- Single-pass BPMs ha
 - 38 sets for each rin
- The system consists analog-digital conver timing control circuit

Beam]

v

Intro

- Expected position resolution
 - 100 μm resolution at 0.1~1 mA
 - e+ injection beam (width) within 500 μm resolution

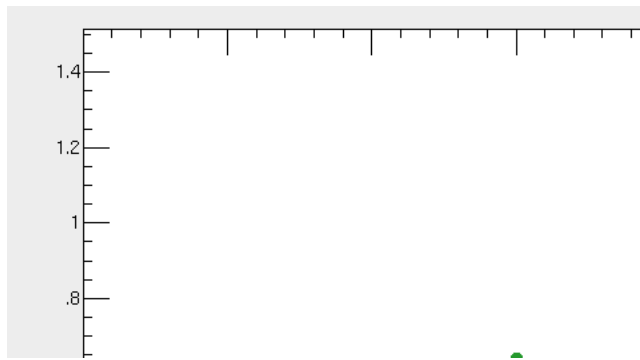


Betatron F

- Horizontal betatron μ
 - One of injection kick
 - Damped free oscillation
 - BxB feedback is 0
 - Turn-by-turn beam formula:

$$x_n = Ae^{-\mu n}$$

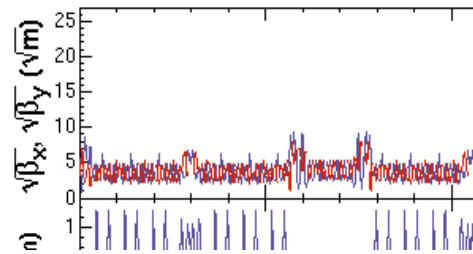
Error of M



Betatron F

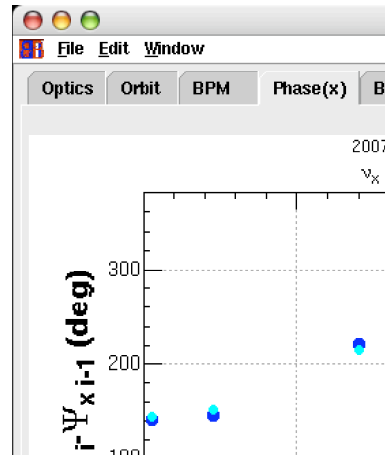
Horizontal betatron phase:

р а е r a p o c W



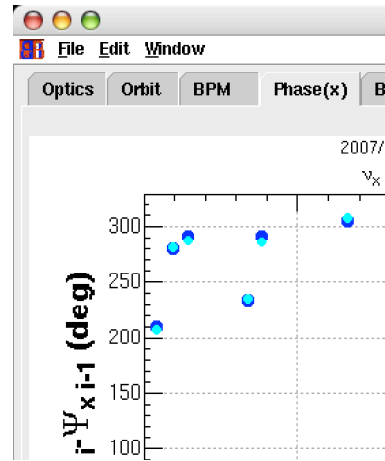
Betatron Phase

- Example 1



Betatron Phase

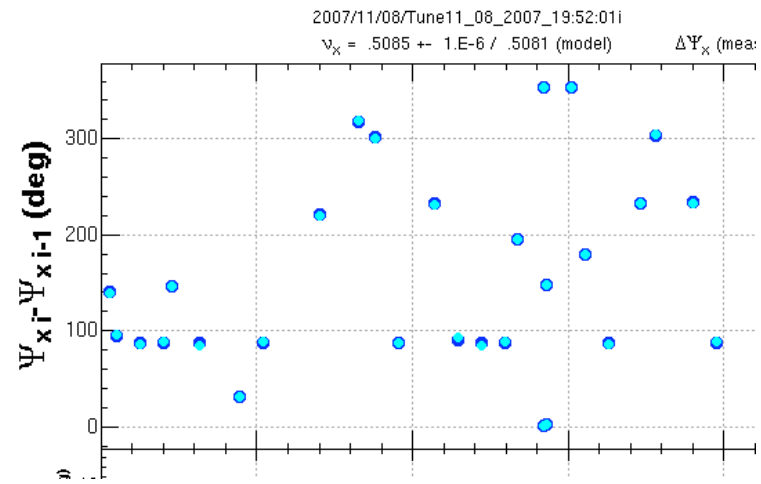
- Example 2





Tracking

Tracking

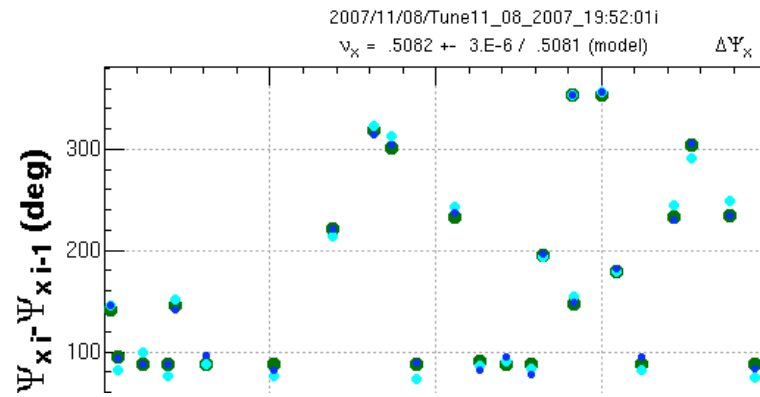




Tracking

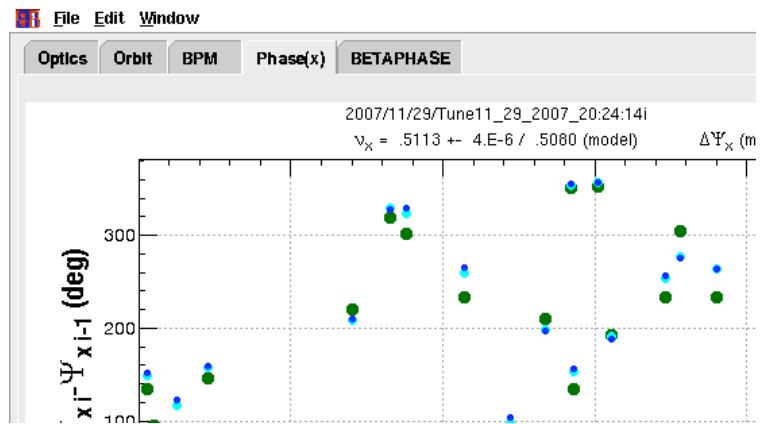
200

green: design optics(model)
cyan/red: single-pass BPM(ONEPASS)
blue: global beta measurement(BETAPHAS)

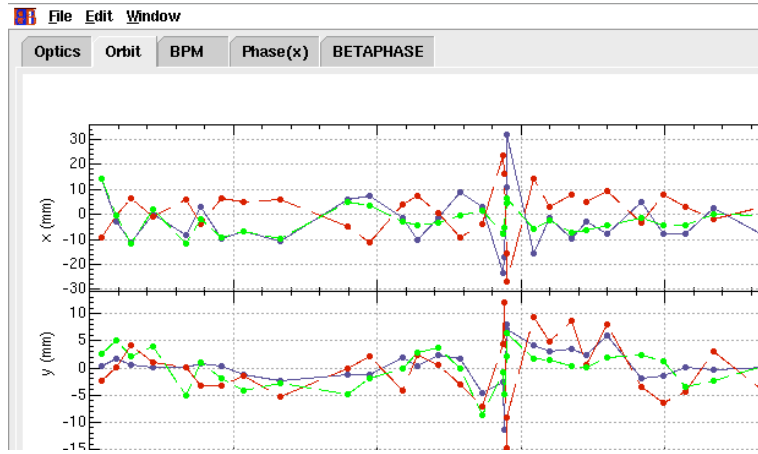


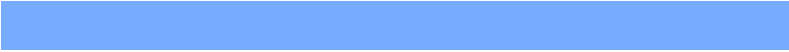
20C

green: design optics(model)
cyan/red: single-pass BPM(ONEPASS)
blue: global beta measurement(BETAPHAS)



Orbit Measure



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- Betatron phase measurement pass BPMs.
 - Intrinsic resolution of tracking simulation.
 - Scatters of deviation from horizontal orbit displacement tracking simulation. The energy-loss and RF acceleration