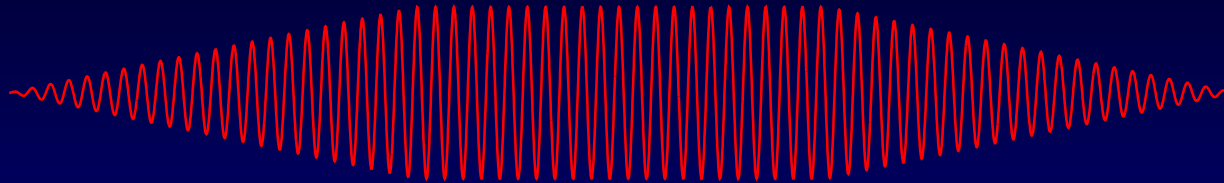


Beam commissioning of the LHC AC dipole



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Contents

- Goal?
- When?
- What?

Goal?

- Verify the safe operation of the AC dipole within the specified margins, e.g. at injection:
 - Chromaticity: $Q' < 7$
 - Detuning: $(\Delta Q)_{3\sigma} < 5 \times 10^{-4}$
 - Excitation: $A < 7\sigma$
 - Drive tune separation: $|Q_D - Q_x| > 0.02$
- Verify the expected beam response, e.g.:
 - BPM turn-by-turn data
 - emittance growth
 - A versus $|Q_D - Q_x|$

When?

- From Mike's meeting: as soon as accurate optics measurements are required at high energy
- 2009 run β -beating *acceptance* is between 30%-50%
- 2009 run top energy is 1.1 TeV
- Kick measurement should provide accurate measurements up to ≈ 3 TeV
- Availability of the instrumentation
- Shall we still request the AC dipole beam commissioning in 2009?

What?

- Chromaticity measurement and control
- Amplitude detuning measurement (!?)
- Emittance measurement
- Scan of excitation and $Q_D - Q_{x,y}$
- $\times 4$ AC dipoles: B1, B2, H & V
- Injection first and then higher energy...
(this is going to take time)