

# AC Dipole/1

New AC Dipole attempt...

Parameters @ 7 TeV:

- Max amplitude 1.2 mm /  $4\sigma$
- Risetime ~ 200 ms for tune distance of 0.01.

→Max amplitude of ~ 19 mm at 450 GeV !!!

Recommendation No1 :

- **Safe Energy must be used to limit the power/amplitude at 450 GeV** to XX (7?) mm. Amplitude scaled in the ramp according to E. Recommend the same limit than aperture kicker at 450 GeV?

# AC Dipole/2

If the tune distance is not 0.01 but 0.001 (by mistake...) then the rise-time is ~10 times faster.

Amplitude growth :

- 1.2 mm in 20 ms @ 7 TeV
- ~ 1 mm in 1 ms @ 450 GeV

D1 failure : ~ 1 mm in 5 ms !

Recommendation No 2 :

- **Safe Energy must be used to limit the amplitude growth at 450 GeV** to a reasonable value. To be defined. Same applies for the ramp...

Recommendation No 3 :

- **It would be desirable to use a BPM signal as direct input to limit the amplitude.**

# Safe beam?

At injection it seems reasonable to allow AC dipole operation only with safe beam.

Is the same logic at 7 TeV excessive? This will limit AC dipole to ~ pilot !