

Wake Fest 07



Where all of your wake questions will be answered
Well...at least they will be acknowledged
Anyway... the talks will be posted

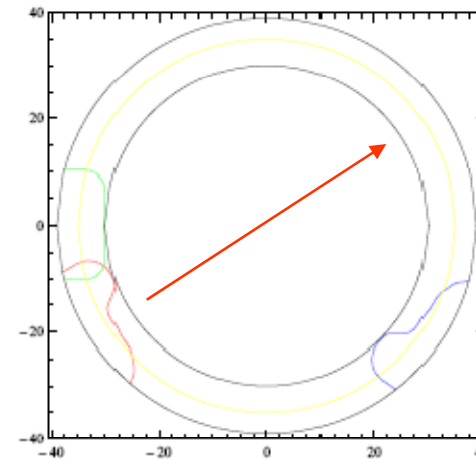
Session 1: On-Axis Wake/RF Kicks

- Review estimates of size of these kicks due to asymmetric power coupler and power coupler and HOM antennae
- Do rough estimates of the impact on the bunch emittance (the LET group can provide more accurate evaluations if needed)
- Propose methods to reduce/eliminate the kicks

Solution that does not change cavity parts and cancels azimuthal asymmetries

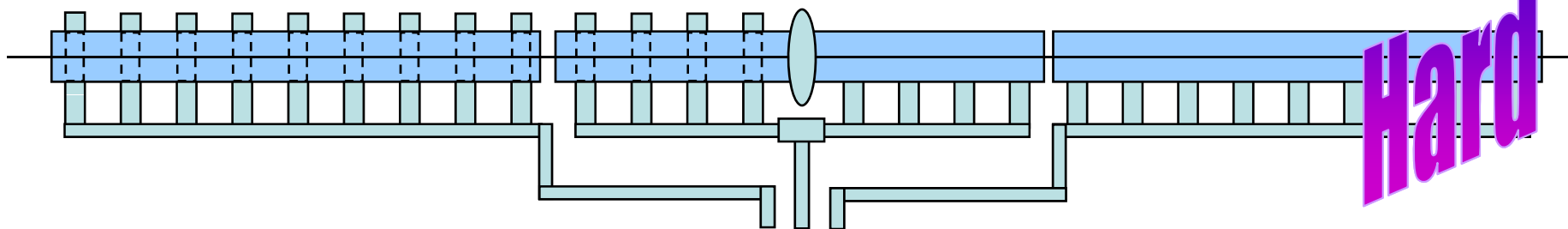
First: Rotate downstream HOM by 180 degrees to reduce local effect

fm (green) and hm couplers (red, blue); circles with a= 30 mm, 35 mm, 39 mm



EASY

Second: Rotate cavities by 180 degrees in downstream half of rf unit and connect WG to couplers on wall side (although distribution on aisle side)

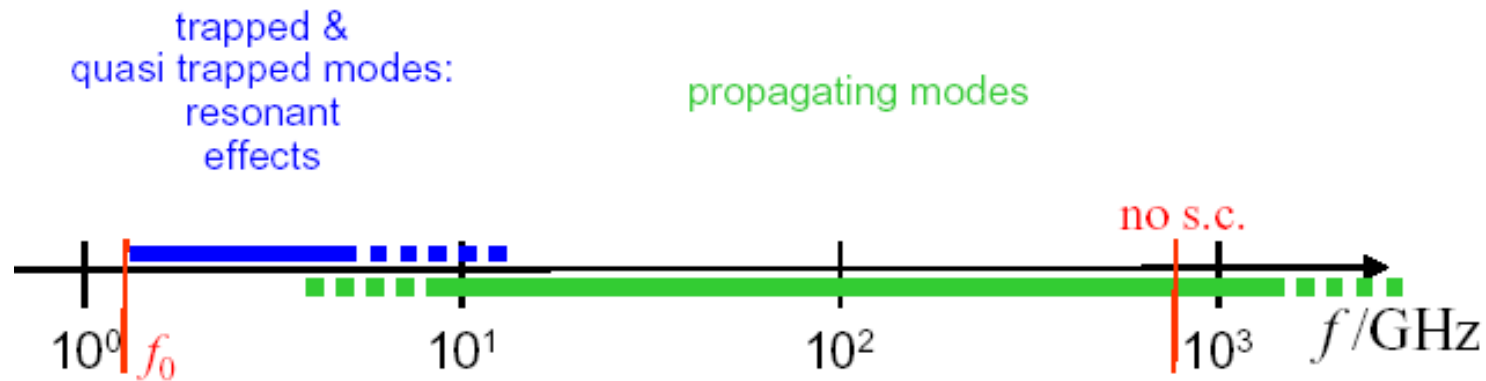


Hard

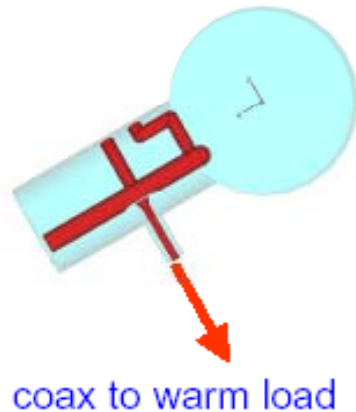
Session 2: Realistic Wakes and HOM Absorber Effectiveness

- Realistic wakes
 - Study of effect of non-ideal cavity shape on dipole mode properties
 - Computation of long-rang wakefields
- Wake effect on beam emittance
 - Effect of x-y coupling
- HOM heating
 - How much power goes into the 2K system versus how much is extracted with the 70K HOM absorber

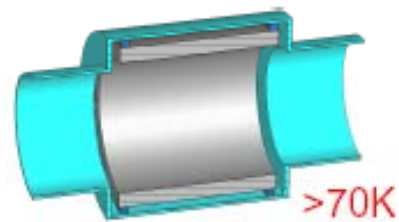
Where Does The HOM Power Go



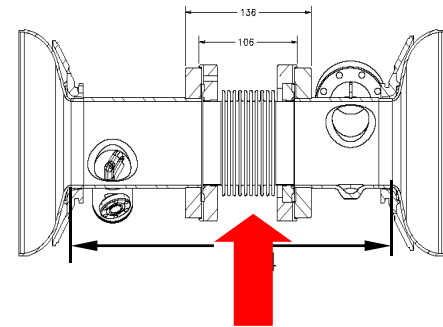
HOM couplers



HOM absorbers



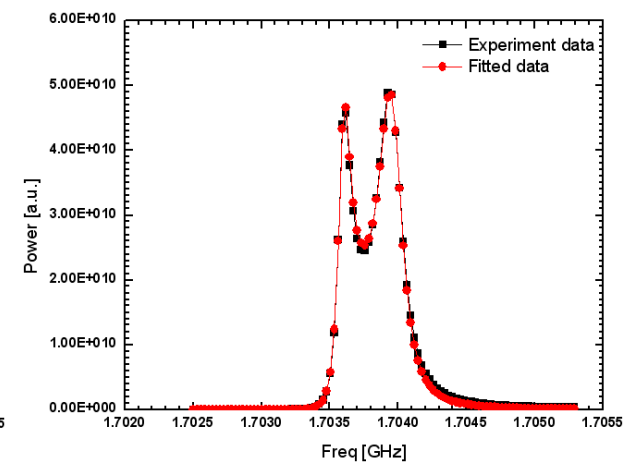
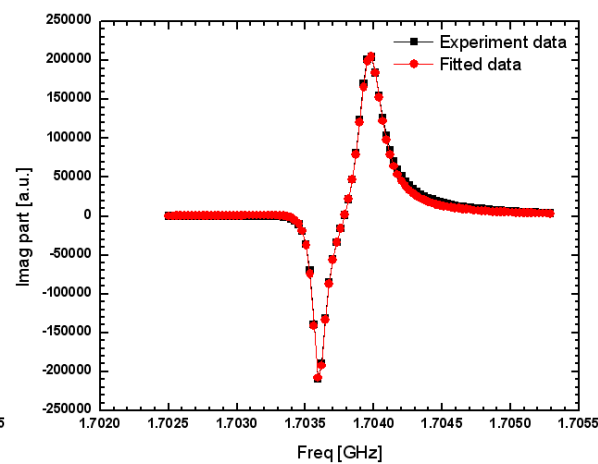
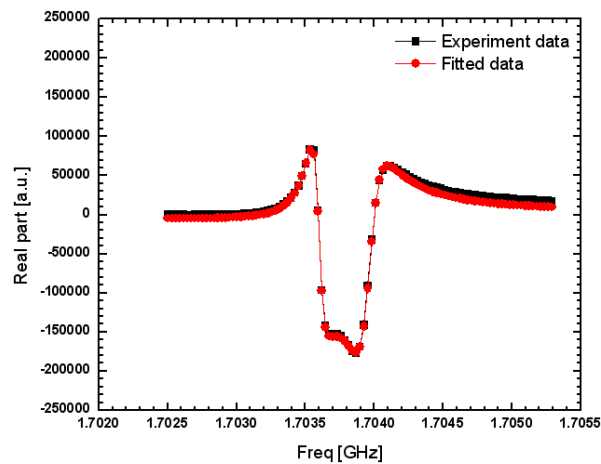
no transmission lines or waveguides
⇒ absorber at temperature level with good cryo efficiency



How much power is lost between cavities

Session 3: Multi-Cavities and HOMs

- Trapped modes in multi-cavities
 - Various methods for finding such modes
- HOM measurements at TTF
 - As a beam position monitor
 - Modal analysis to extract dipole properties – fit real and imaginary parts of frequency spectrum to separate mode polarizations



Session 4: Multipacting and Collimator Wakes

➤ Multipacting

- Various methods for computing multipacting bands
- Comparisons to data
- Nature of multipacting

➤ Collimators

- Review of collimator wake measurements and outstanding questions

Harmonic (1.3 GHz) Content
Of Electron Probe Signal:
Relative Amp -vs- Time (μs)

