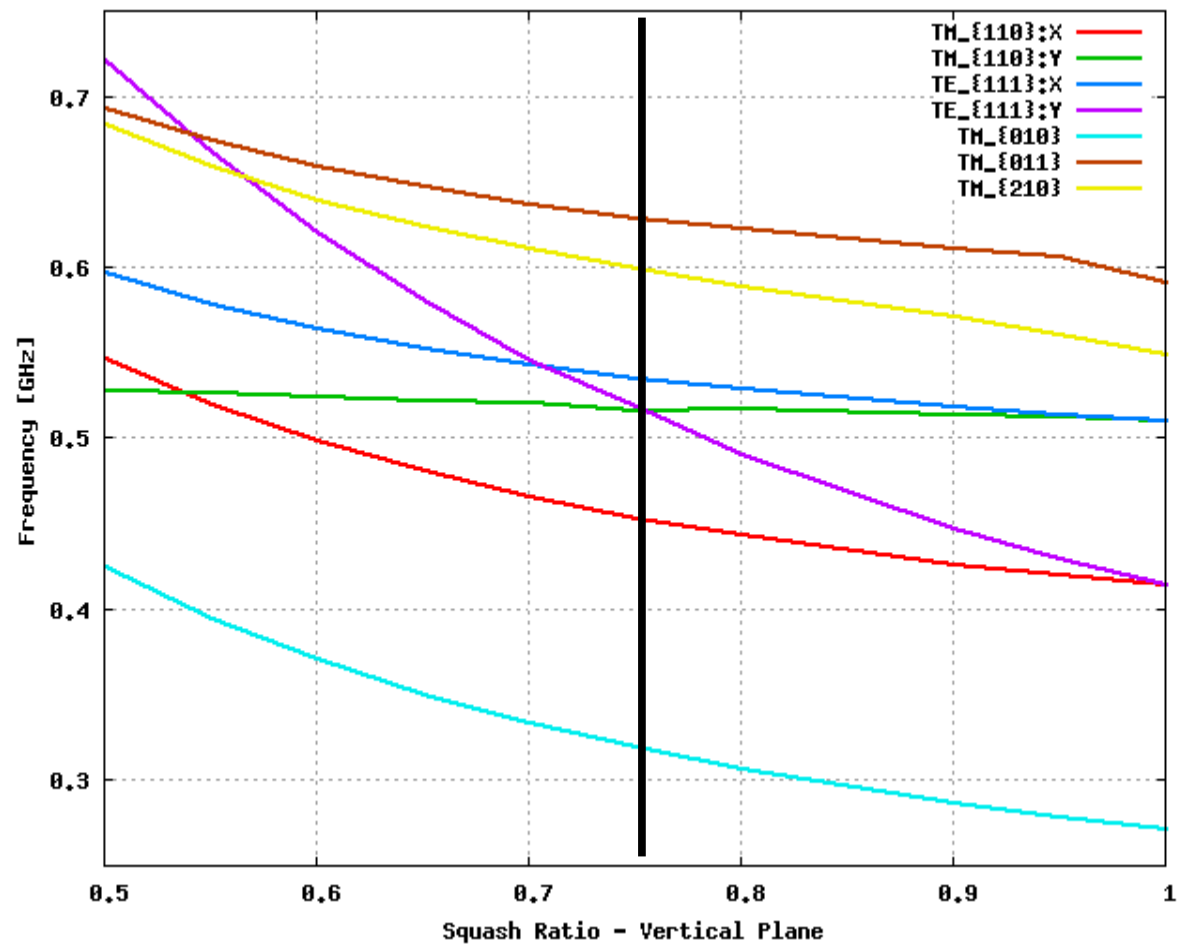
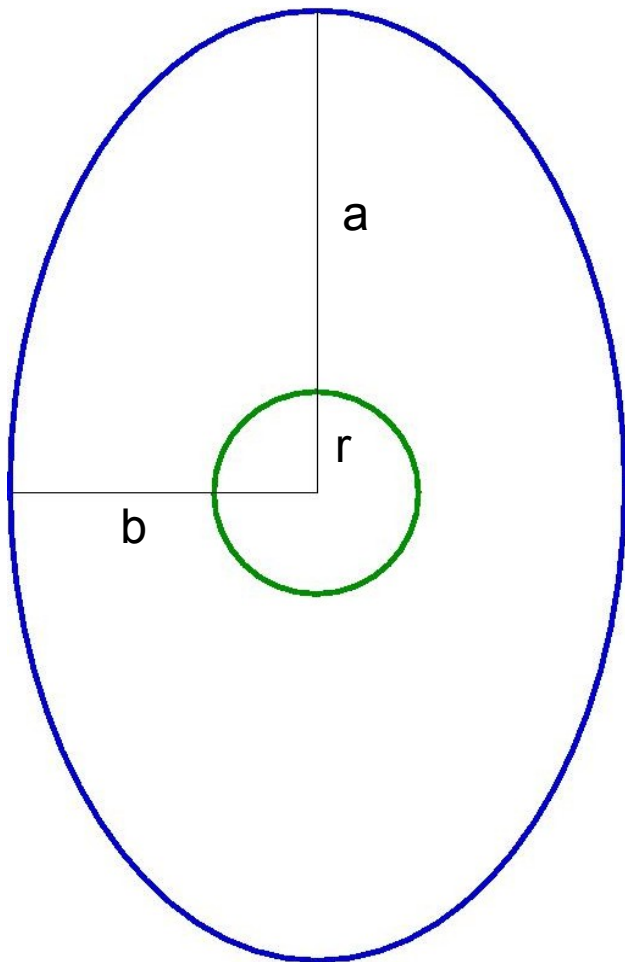


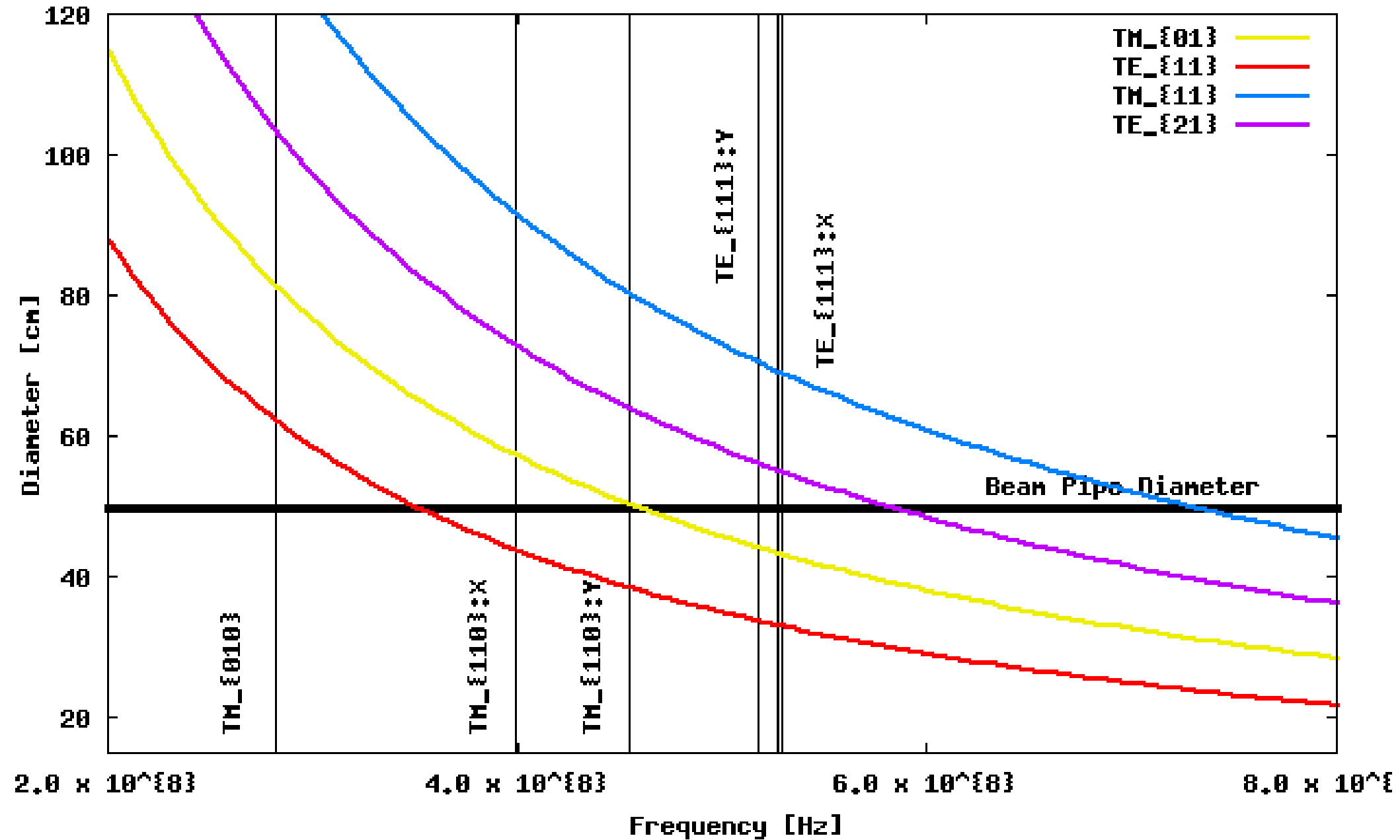
# LHC Crab Cavity: A Preliminary Design

# Squash for Maximum Separation

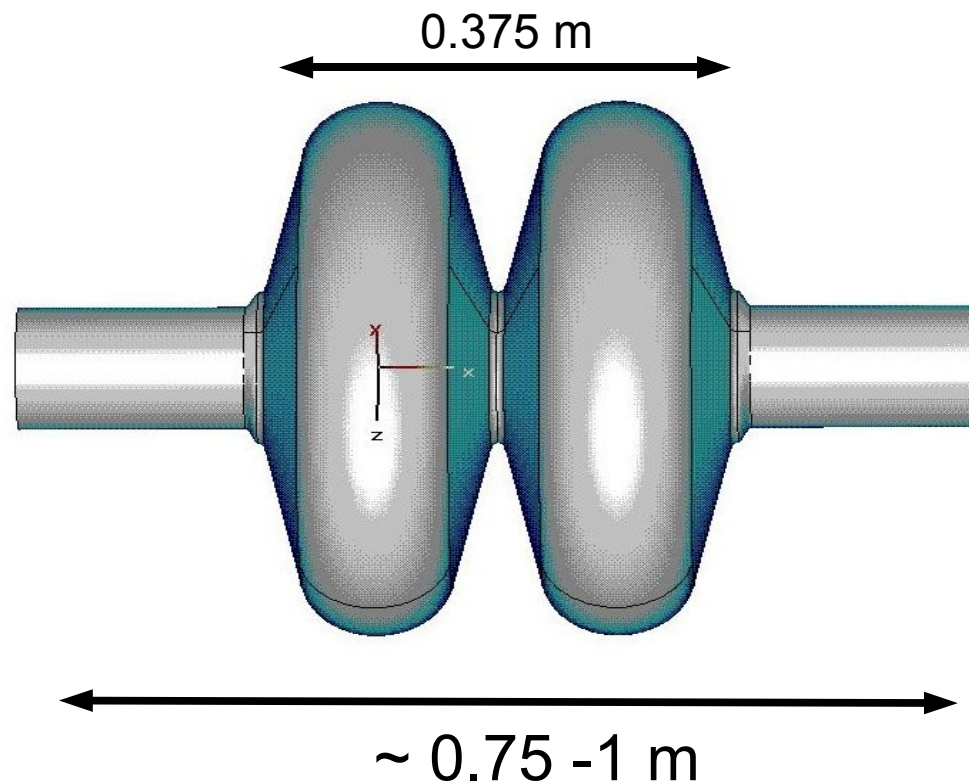


Ratio for this Geometry: 0.75

# Beam Pipe Diameter



# 400 MHz Baseline Design



Cell Length: 18.75 cm

BP Radius: 15.0 cm

**Hor. Eq. Radius: 53 cm**

Ver. Eq. Radius: 37.5 cm

Squash Ratio: 0.75

Eq. Dome Radius: 12.0 cm

R/Q: ~ 95 Ohms

Qext:  $10^6 - 10^7$

Stored Energy: ??

Input Power: ~ 20 - 50 kW

Kick Voltage: 5 MV

Peak E Field Ratio: ??

Peak B Field Ratio: ??

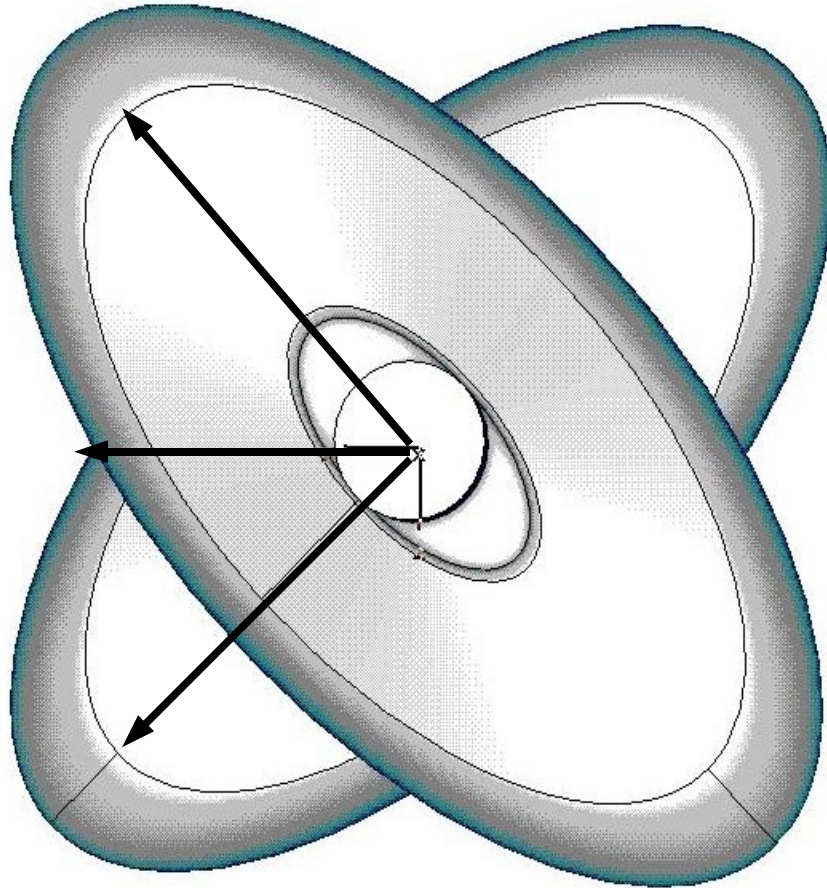
5 mrad crossing angle: 70 MV

Requires: 14x2 Cells

Long. Dist: ~ 15 m

# Vector Kick Scheme

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Available Beam Pipe Sep: 40-45 cm ??

- Gain space for the other BP
- Kick will be reduced by  $\sqrt{2}$
- Good Alignment of cavities
- RF Voltage knob for the right kick
- He vessel needs to contour cavity
- Tough to tune (if common cryo)