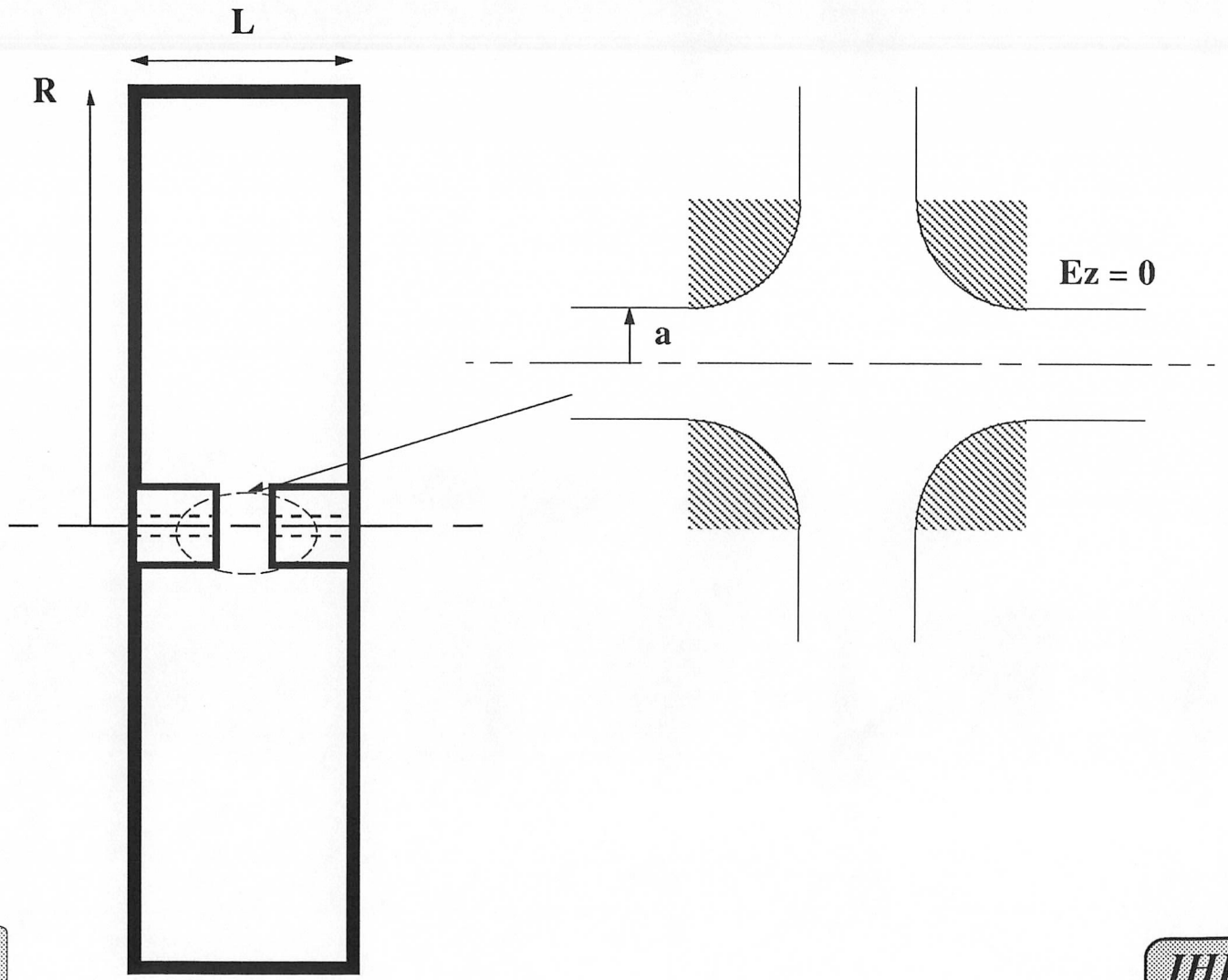
Accelerating formula

$$\Delta W = E_0 T L \cos\phi$$

$$E_0 = \frac{1}{L}\int_{-\frac{L}{2}}^{\frac{L}{2}} E_z \, dz$$

$$T = \frac{\int_{-\frac{L}{2}}^{\frac{L}{2}} E_z \cos kz \, dz}{\int_{-\frac{L}{2}}^{\frac{L}{2}} E_z \, dz}$$

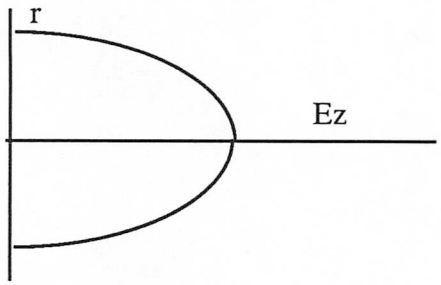
DTL geometry



DTL field calculation

- **R/3 < r +< R Cylinder TM01**

$$E_z \approx E\, J_0\left(\frac{y_{01}}{R} r\right)$$



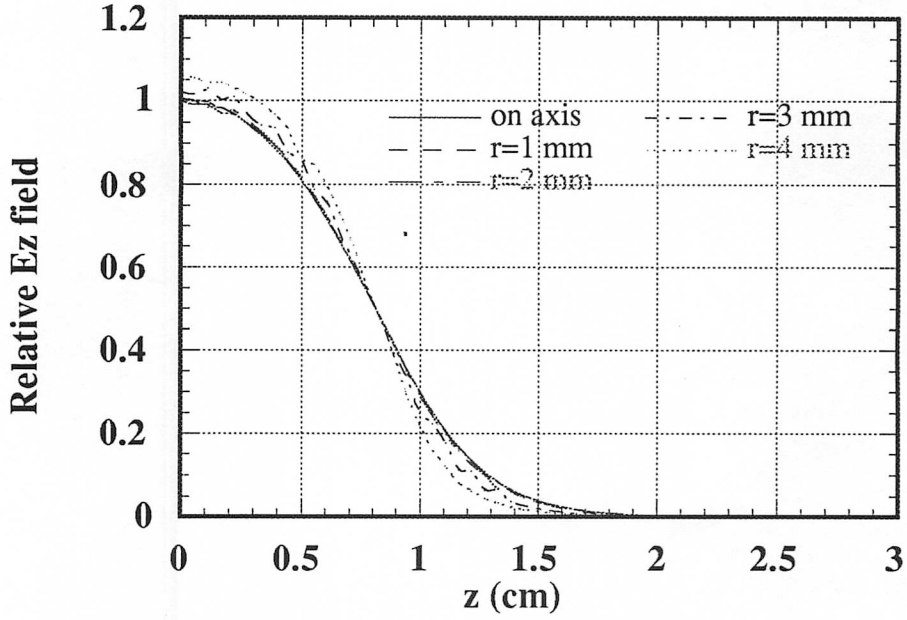
r <= a Fourier expansion

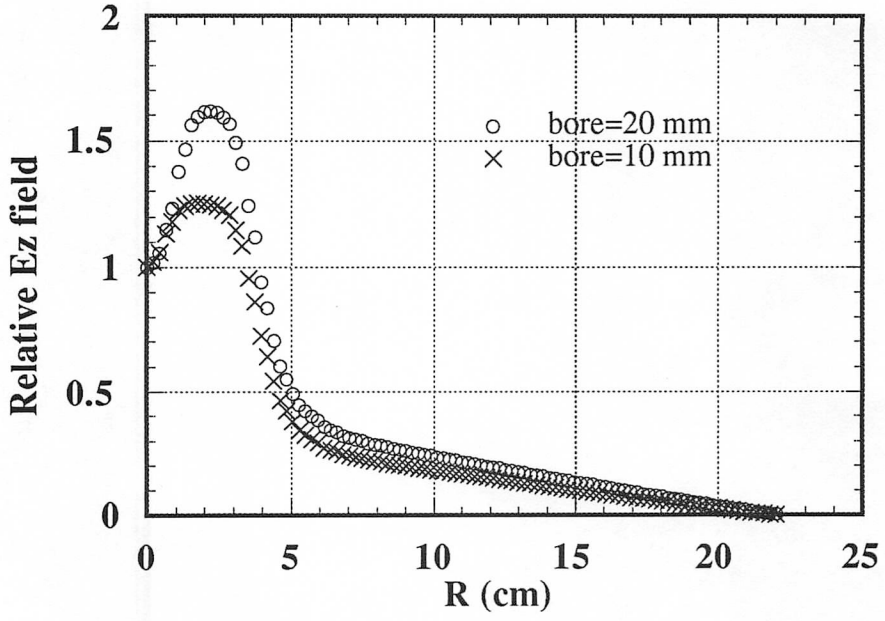
$$E_z \approx E'\, I_0\left(\frac{2\pi}{\beta\lambda} r\right)$$

$$k_c^2 = k^2 - \beta^2$$

$$= \left(\frac{2\pi}{\lambda}\right)^2 \left[1 - \frac{1}{\beta^2}\right]$$

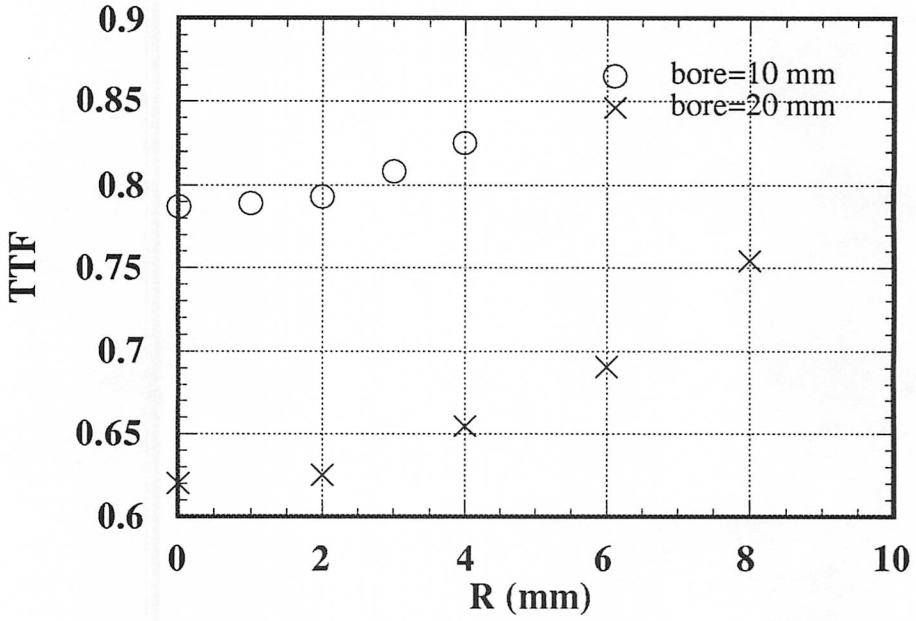
Ez field in 3-MeV Drift tube

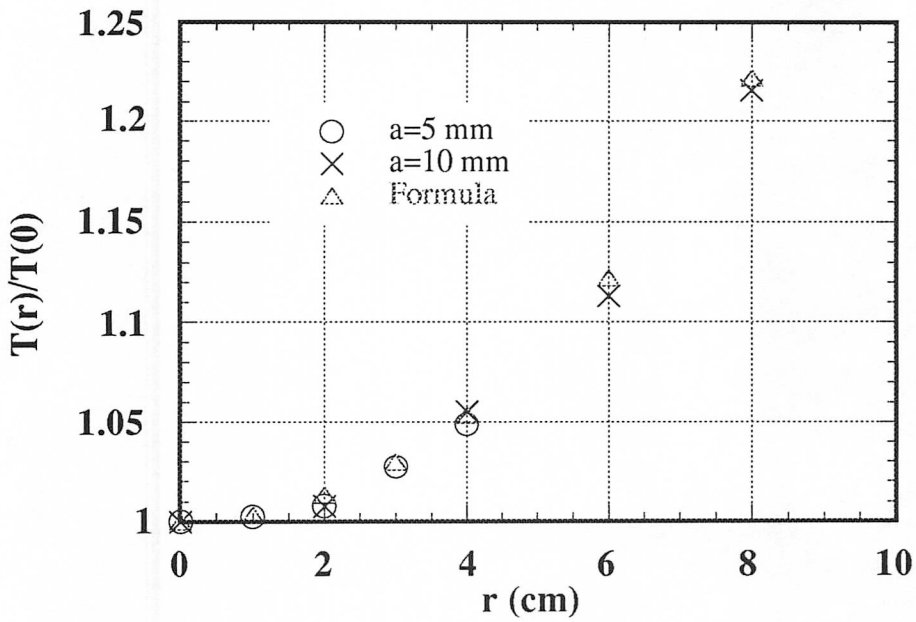




JHP KEK

TTF in 3-MeV Drift tube





JHP KEK

Field shape in a gap

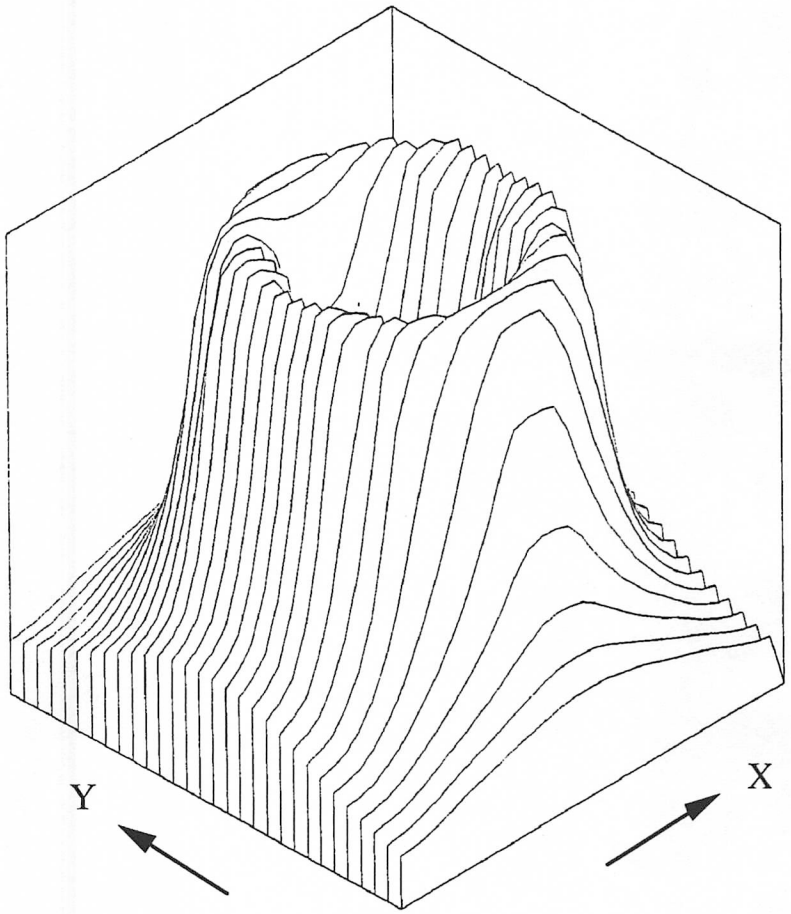
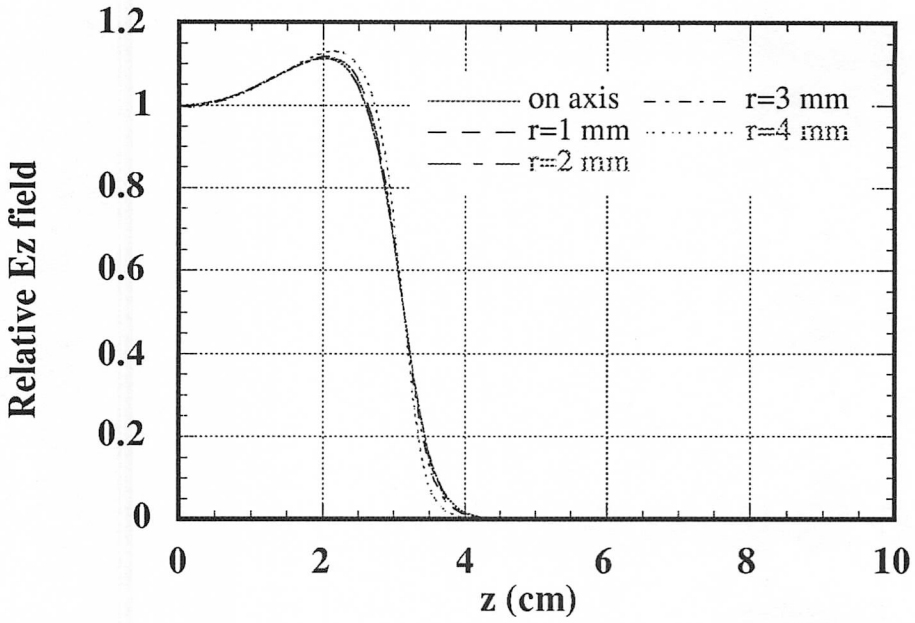
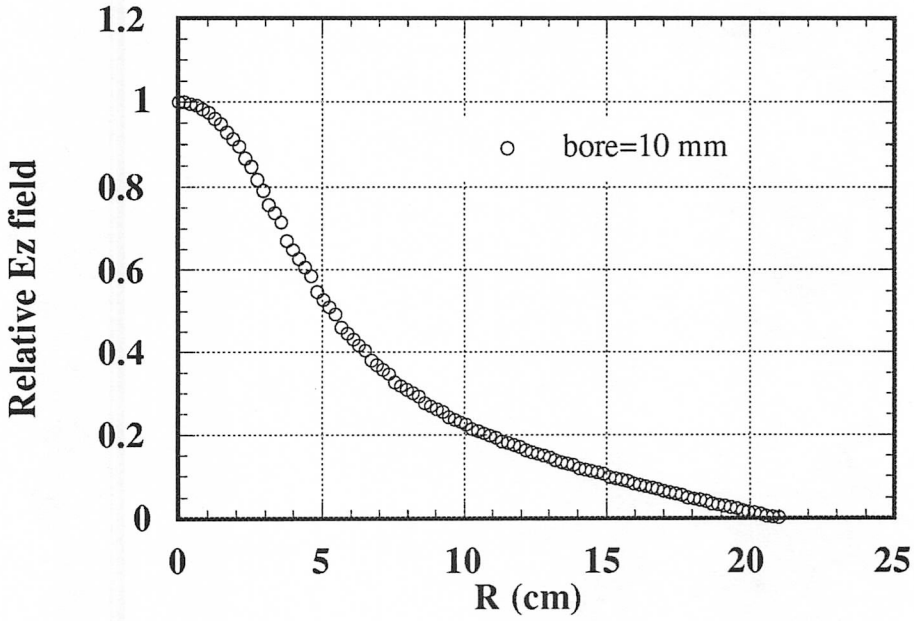


Fig. 6 Three-dimensional plot of the calculated electric fields Ez in the xy-plane at the gap center.

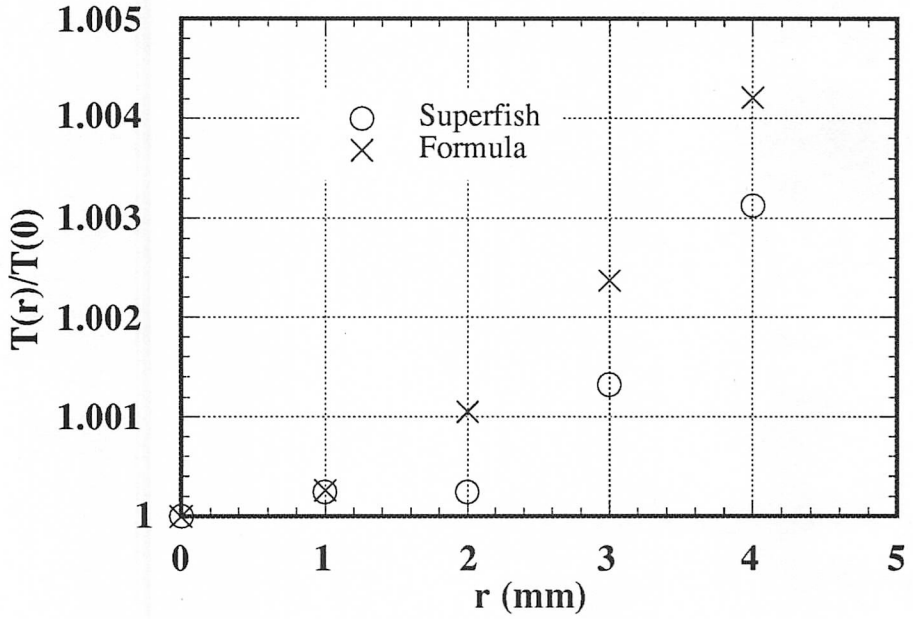
Ez field in 40-MeV Drift tube





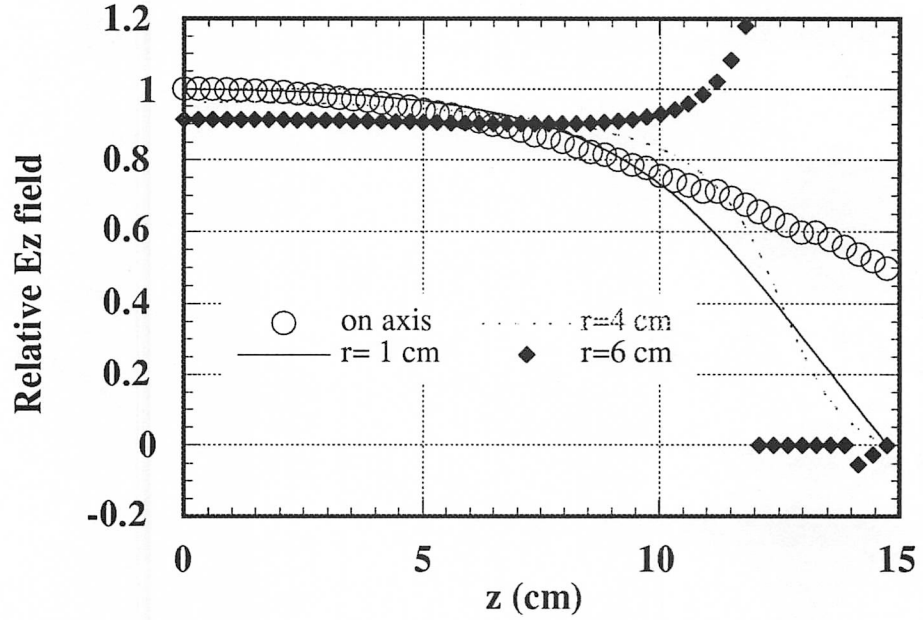
JHP KEK

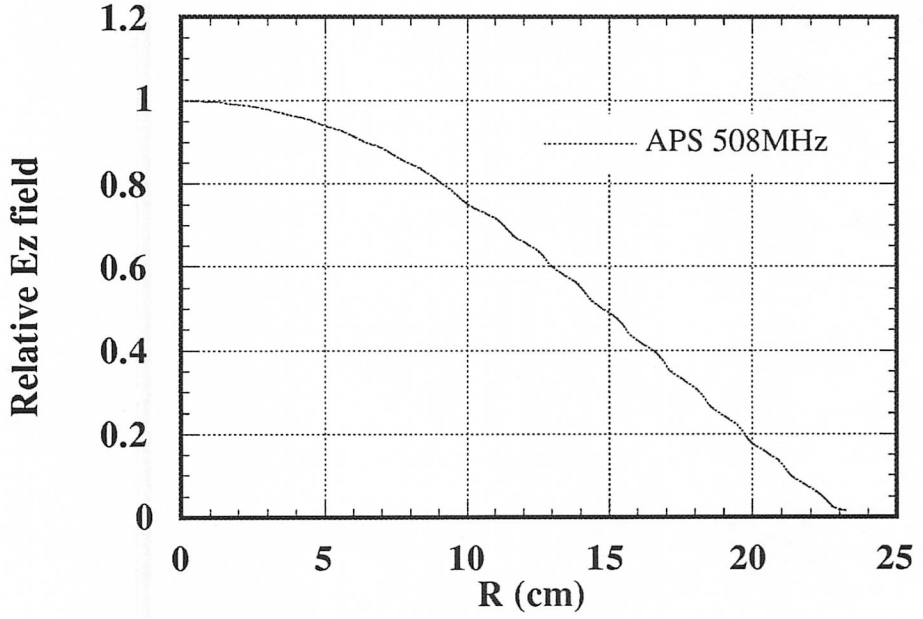
TTF in 40-MeV Drift tube



JHP KEK

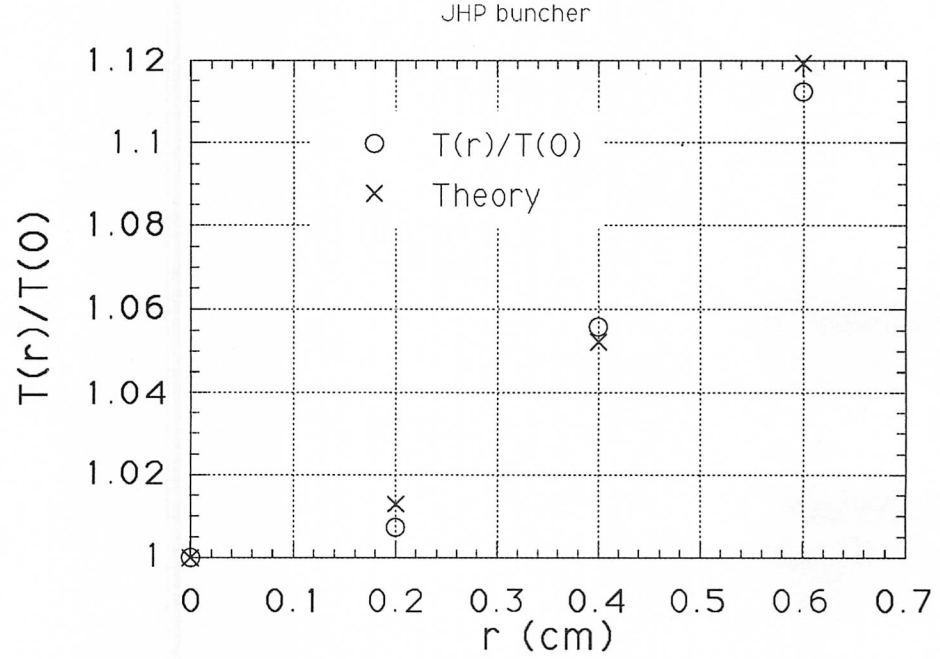
Ez field TRISTAN APS

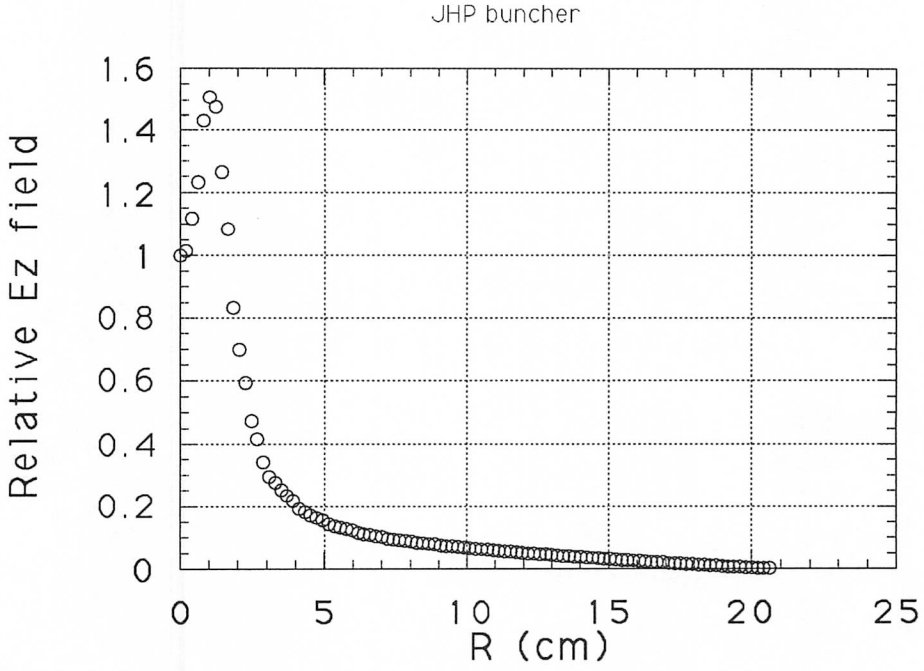




JHP KEK

TTF in the JHP buncher





JHP KEK