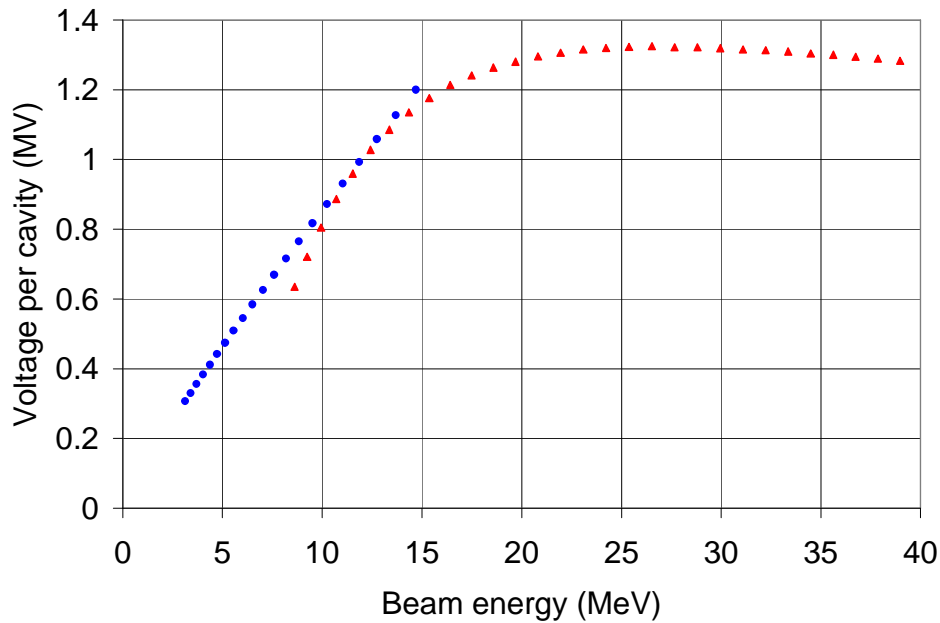


Reminder. RT-SC transition



No transition for beam:

$$\text{Voltage}_{\text{RT}} = \text{Voltage}_{\text{SC}}$$

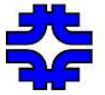
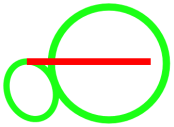
$$\text{Period}_{\text{RT}} = \text{Period}_{\text{SC}}$$

15.00 mm (Horiz) 30.0 Deg (Long.)

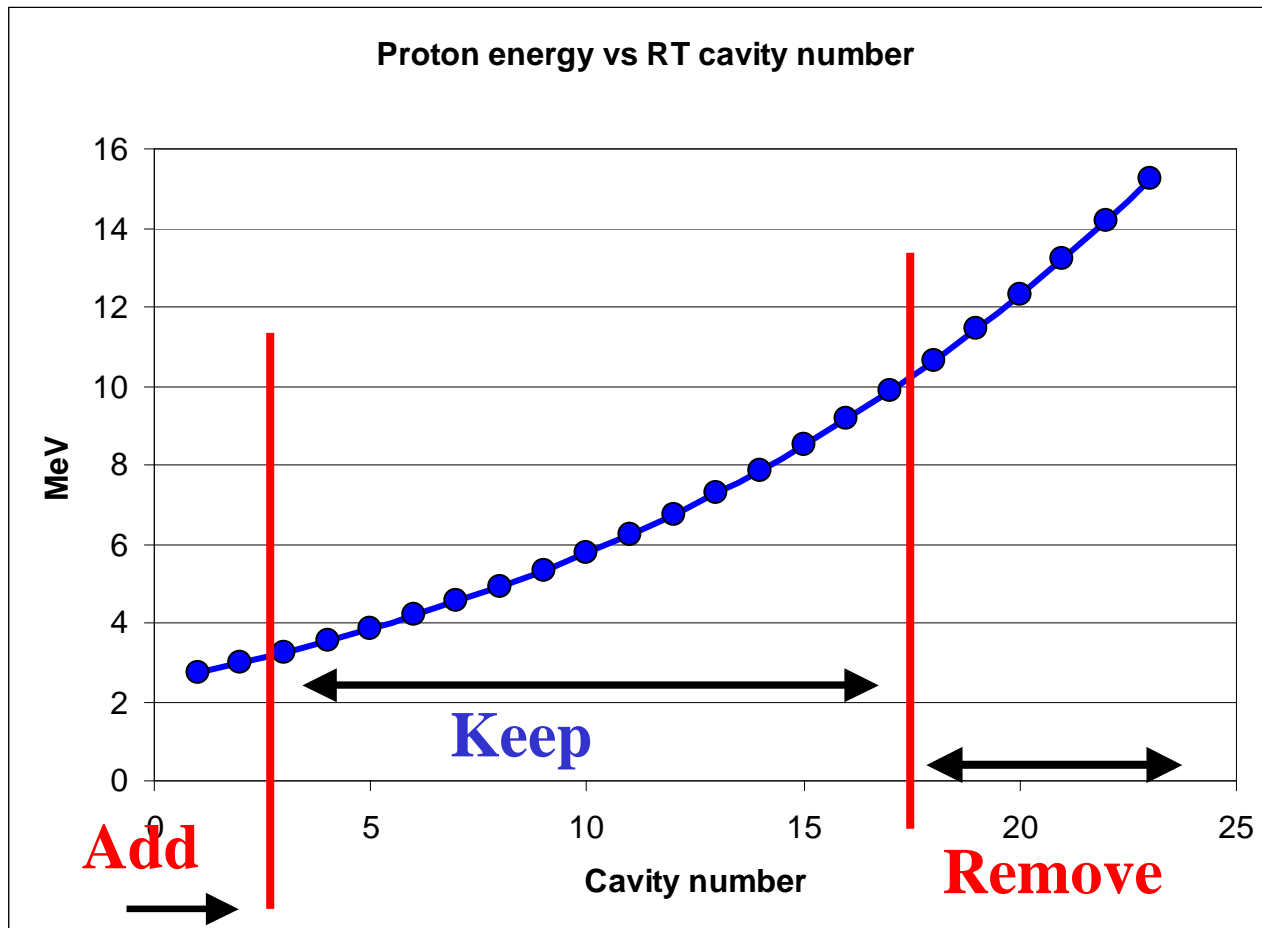


15.00 mm (Vert)

Length= 20251.54mm



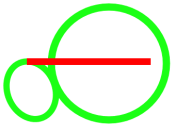
Changes in RT section of PD



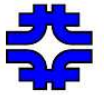
New interval of energy:
2.5 – 10 MeV

Last period length:
75 cm. Assumption
was 60 cm.

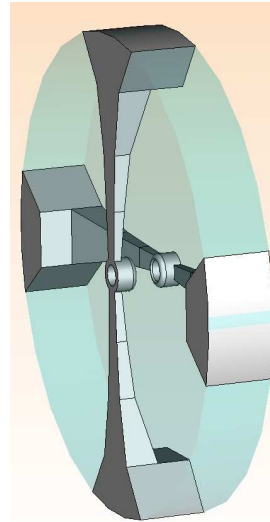
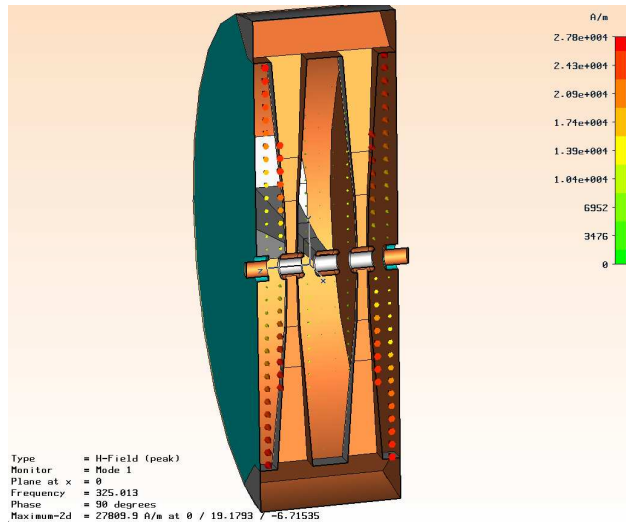
First period length:
Assumption was
40 cm.
How big is it now?



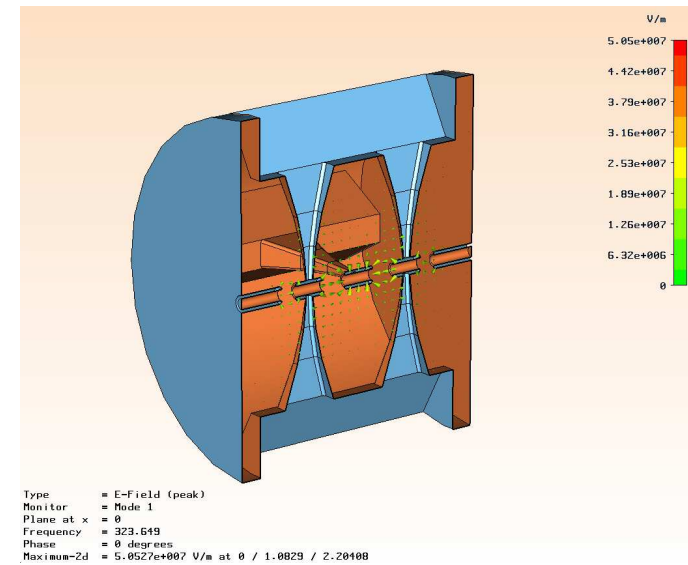
RT CH cavity design

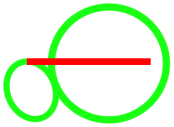


Flat end walls

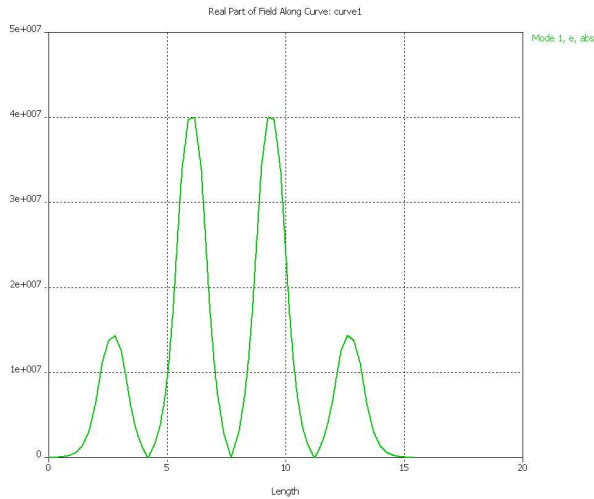
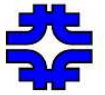


Volume end walls

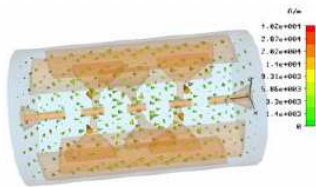




Rsh

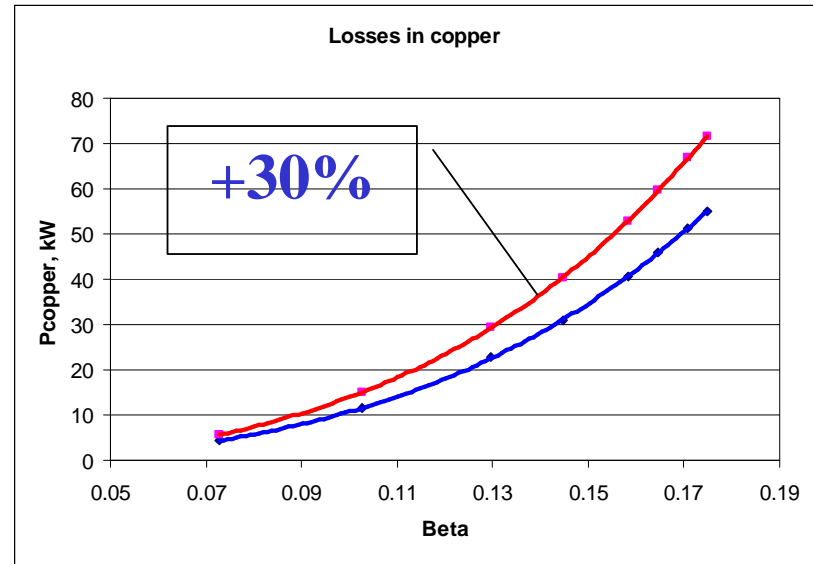
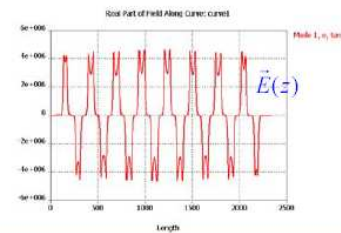
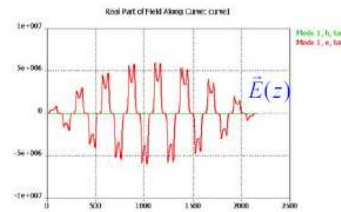


$$Z_{\text{eff}} = \frac{\Delta W^2}{W_{\text{Losses}} \cdot L_{\text{Period}}}$$

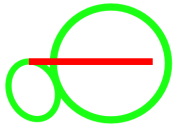


Multicell cavity after volume tuning of tank end regions :

+20% to ideal case



Flat walls -> P_copper*2



Losses in copper



| Cavity number | Beta | ZT ² Ideal ends | Q | Voltage MV | W kin MeV | dW MeV | Pcopper kW (+30%) | Pbeam kW I=26 mA | Ptotal kW | |
|---------------|----------|-------------------------------|----------|---------------|--------------|-----------|-------------------------|------------------------|--------------|--------------------|
| 1 | 0.072814 | 143.8762 | 13451.97 | 0.31 | 2.737477 | 0.237477 | 5.585652 | 6.174402 | 11.76005 | |
| 2 | 0.07714 | 140.4765 | 13702.95 | 0.33 | 2.990275 | 0.252798 | 6.658282 | 6.57275 | 13.23103 | |
| 3 | 0.081466 | 137.1258 | 13944.78 | 0.35 | 3.258394 | 0.268119 | 7.816206 | 6.971099 | 14.78731 | |
| 4 | 0.084958 | 134.4576 | 14133.37 | 0.373068 | 3.544185 | 0.28579 | 8.819736 | 7.43055 | 16.25029 | |
| 5 | 0.088562 | 131.7404 | 14321.73 | 0.402461 | 3.852492 | 0.308307 | 9.925233 | 8.015987 | 17.94122 | |
| 6 | 0.092283 | 128.9741 | 14509.57 | 0.432985 | 4.184182 | 0.33169 | 11.14705 | 8.623941 | 19.77099 | |
| 7 | 0.096117 | 126.1675 | 14696.04 | 0.464639 | 4.540121 | 0.355939 | 12.49747 | 9.254412 | 21.75189 | |
| 8 | 0.100068 | 123.3231 | 14880.67 | 0.499685 | 4.922907 | 0.382786 | 13.99307 | 9.952434 | 23.94551 | |
| 9 | 0.104139 | 120.4443 | 15062.95 | 0.530716 | 5.333406 | 0.410499 | 15.65218 | 10.67297 | 26.32515 | |
| 10 | 0.108333 | 117.5359 | 15242.28 | 0.564559 | 5.774216 | 0.44081 | 17.49486 | 11.46106 | 28.95592 | |
| 11 | 0.11265 | 114.6048 | 15417.89 | 0.598953 | 6.246203 | 0.471987 | 19.54199 | 12.27167 | 31.81366 | |
| 12 | 0.117092 | 111.6572 | 15589.09 | 0.636075 | 6.751965 | 0.505762 | 21.81742 | 13.14982 | 34.96724 | |
| 13 | 0.121661 | 108.7001 | 15755.14 | 0.674789 | 7.293235 | 0.54127 | 24.34739 | 14.07301 | 38.4204 | |
| 14 | 0.126361 | 105.7398 | 15915.31 | 0.716139 | 7.87261 | 0.579375 | 27.16196 | 15.06375 | 42.22572 | |
| 15 | 0.131196 | 102.7835 | 16068.83 | 0.760077 | 8.492688 | 0.620079 | 30.29439 | 16.12204 | 46.41643 | |
| 16 | 0.136167 | 99.84135 | 16214.76 | 0.805505 | 9.155202 | 0.662514 | 33.77921 | 17.22537 | 51.00457 | |
| 17 | 0.141273 | 96.9251 | 16352.1 | 0.853449 | 9.86275 | 0.707548 | 37.65249 | 18.39624 | 56.04873 | |
| | | | | | | | 304.1846 | 191.4315 | 495.6161 | Volume ends |
| | | | | | | | 608.3692 | 191.4315 | 799.8007 | Flat ends |