

650 MHz, $\beta=0.61$, 5-Cell Elliptical Cavity

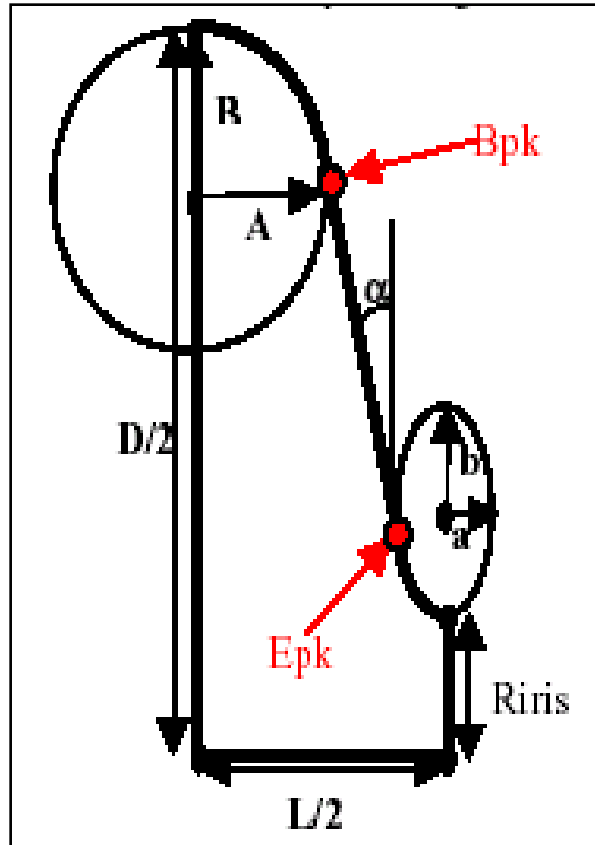


Fig1: Geometry of elliptical shape cavity

Table1: Dimensions of 650MHz, $\beta=.61$,5-cell cavity

	inner cells (mm)	End half cell (mm)
D	394.8	394.8
Riris	48	48
L/2	70.335	70.335
A	54	54
B	58	58
a	13.68	10.67
b	30.82	24.02
α	2.4°	4.5°

Table2: RF parameters for 650MHz,
 $\beta=0.61$,5-cell cavity

Freq (MHz)	650
β	0.61
E_{pk}/E_{acc}	3.0
B_{pk}/E_{acc} [mT/(MV/m)]	4.84
R/Q (ohm)	296
G (ohm)	200

Multipacting Analysis of 650MHz Cavity

- A preliminary study of Multipacting Analysis for 650MHz elliptical cavity has been carried out using 2D software Multipac2.1, windows version
- Multipacting analysis is done for both Mid-cells and End -cells

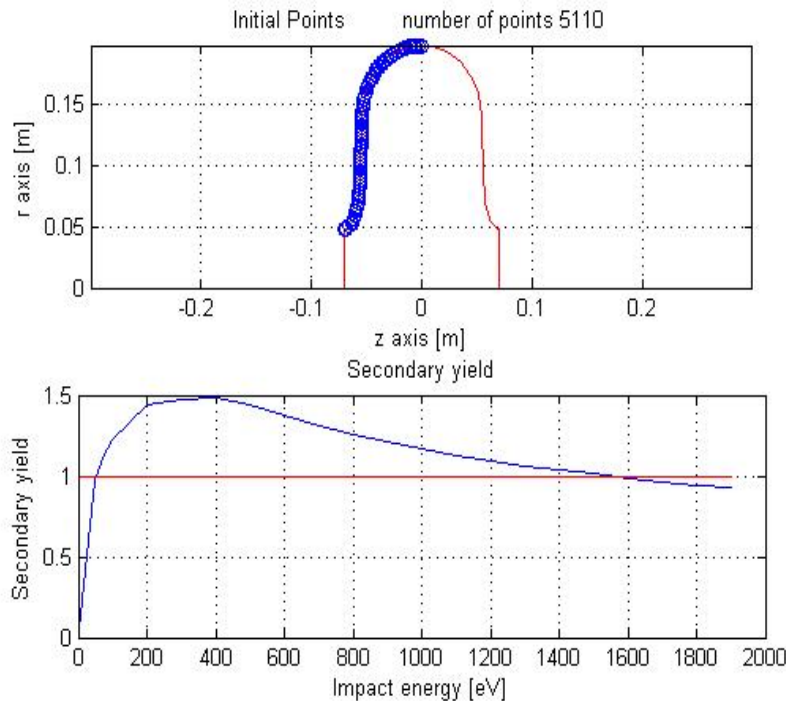


Fig2: Input for Mid-cell Cavity

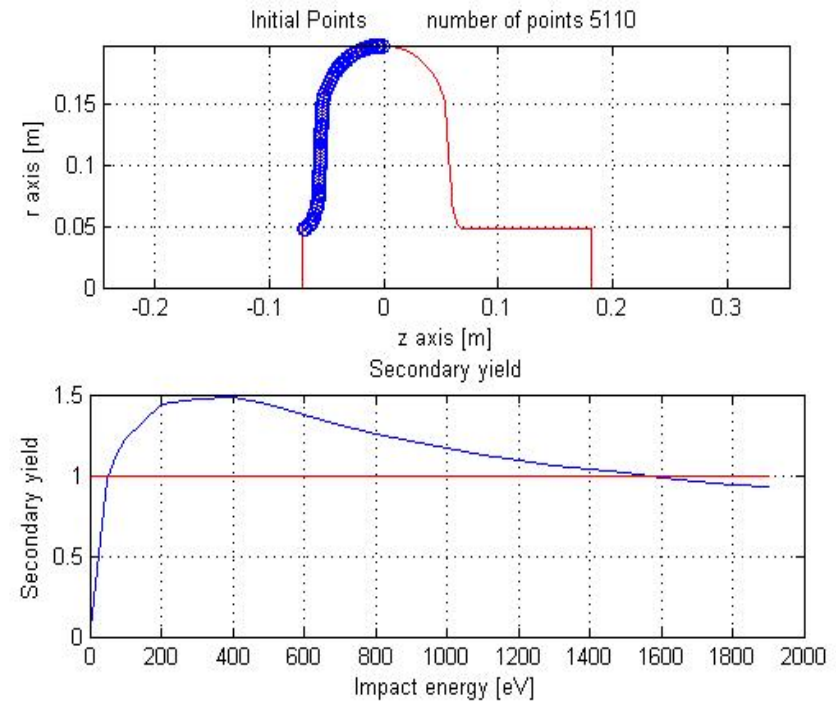


Fig3: Input for End-cell Cavity

Result of Multipacting Analysis

Conclusion:

- Figure 4 and 6 shows the electron counter, average impact energy and enhanced electron counter for mid-cell and end cell cavity
- Impact energy is less than 50 eV for all the peak electric fields except a small region between 30 to 35 MV/m, where it is around 200eV
- But we can conclude that no multipacting as the relative enhanced electron counter is less than 1 for whole range.

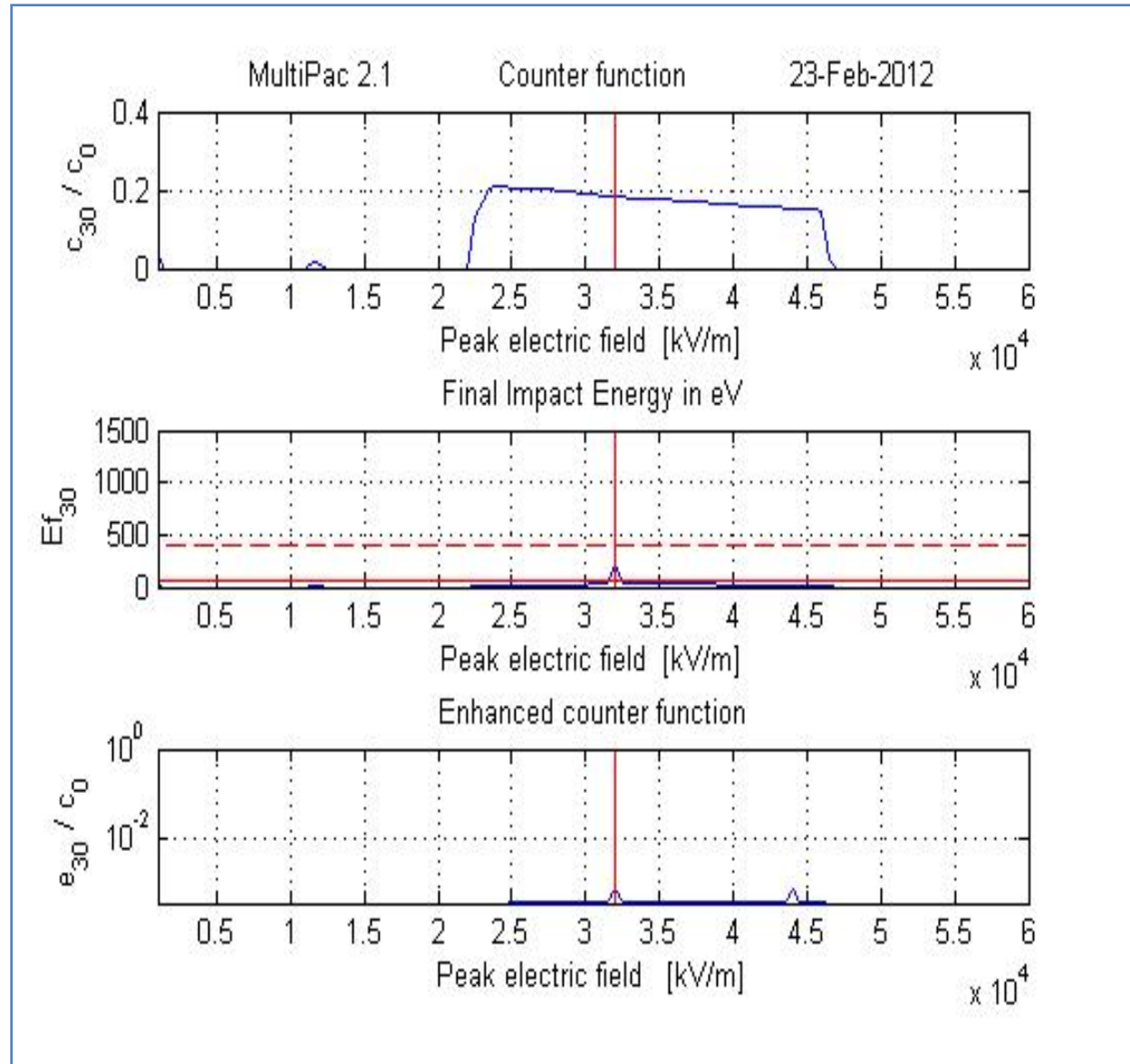


Fig.4 : Results for Mid-cell Cavity

MultiPac 2.1 Electron Trajectory, N = 30, 23-Feb-2012

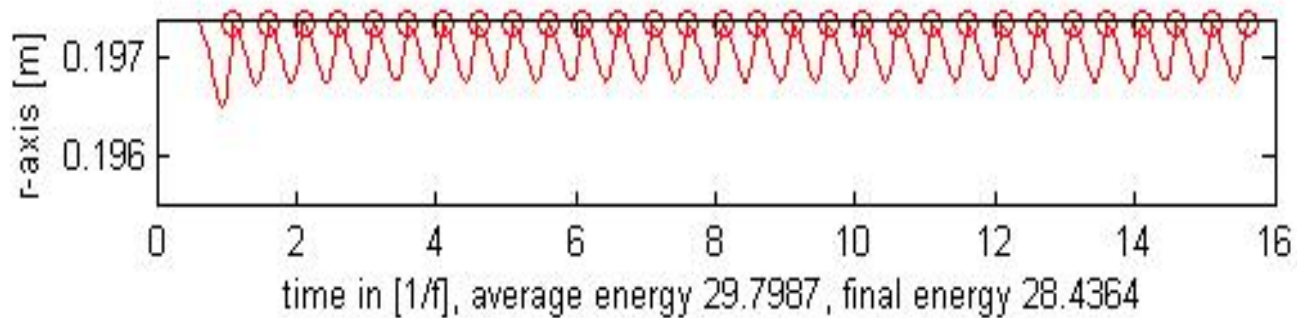
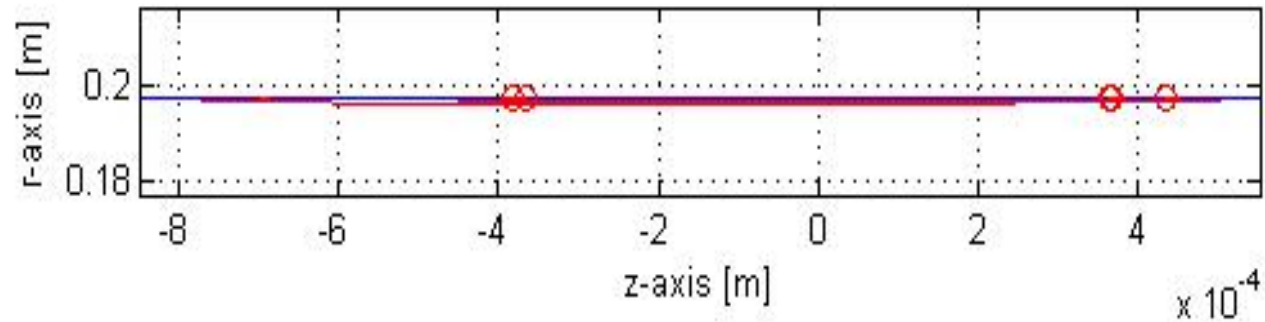
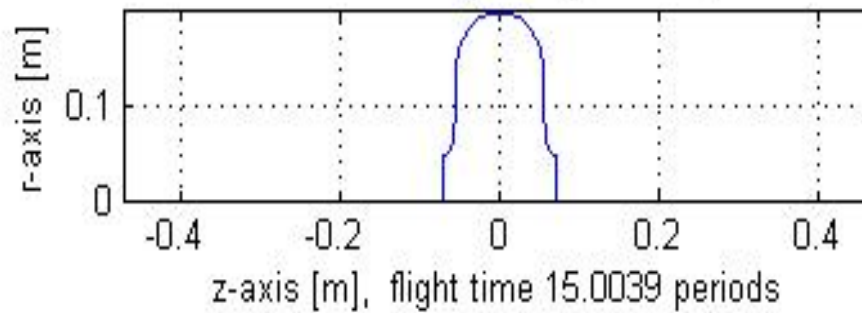


Fig.5 : Results for Mid-cell Cavity

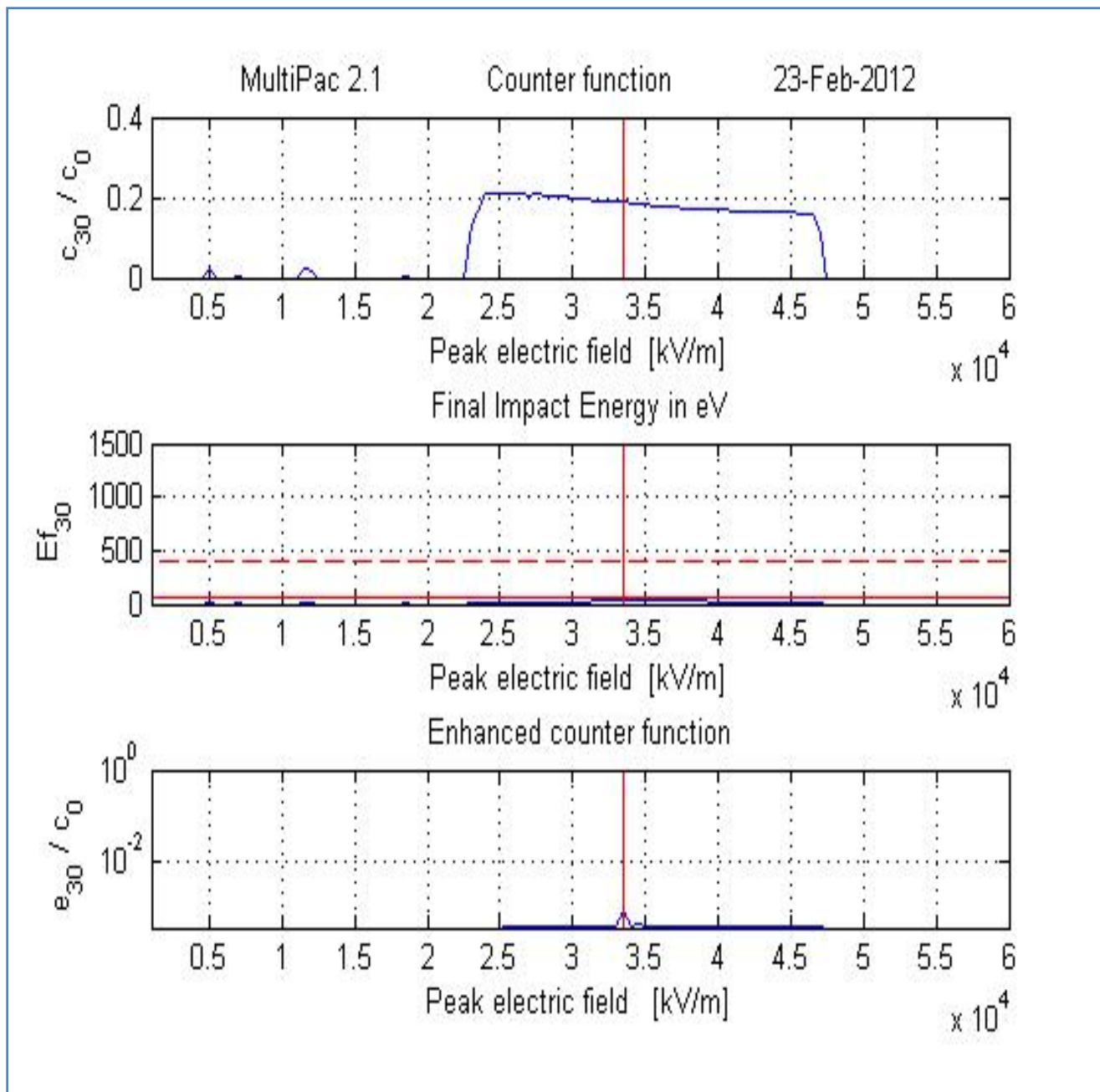


Fig.6: Results for End-cell Cavity

MultiPac 2.1 Electron Trajectory, N = 30, 23-Feb-2012

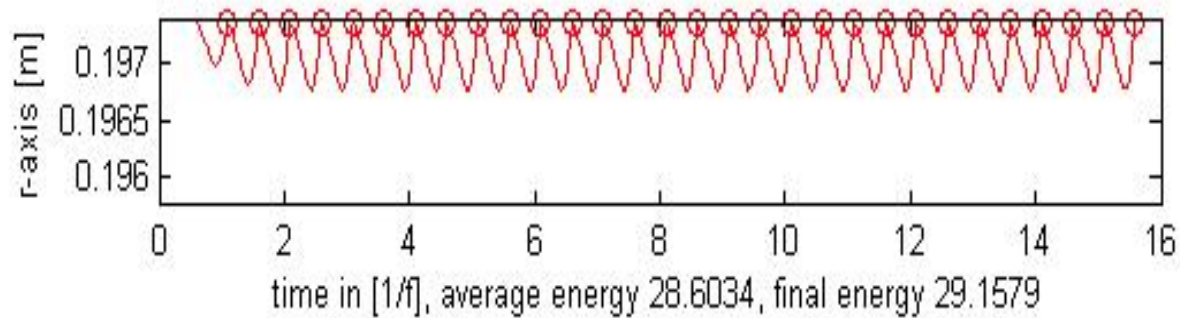
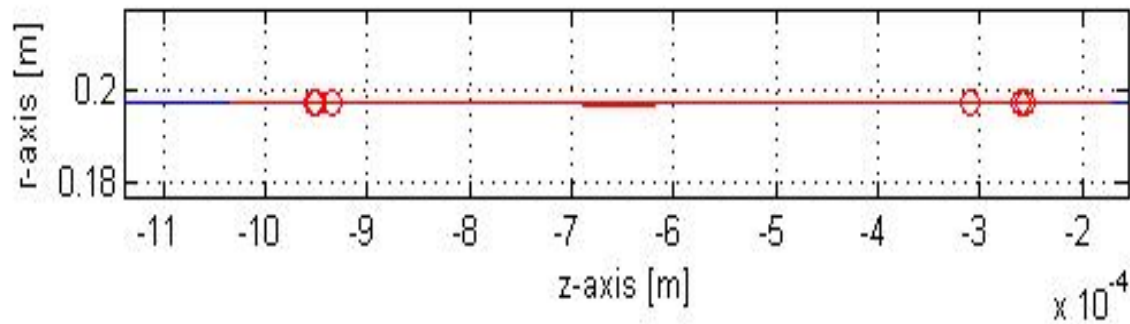
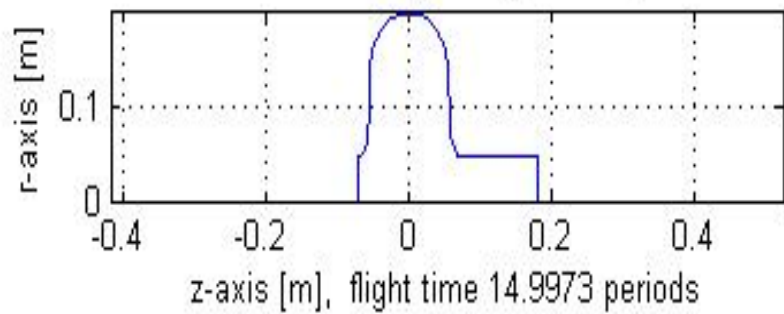


Fig.7: Results for End-cell Cavity