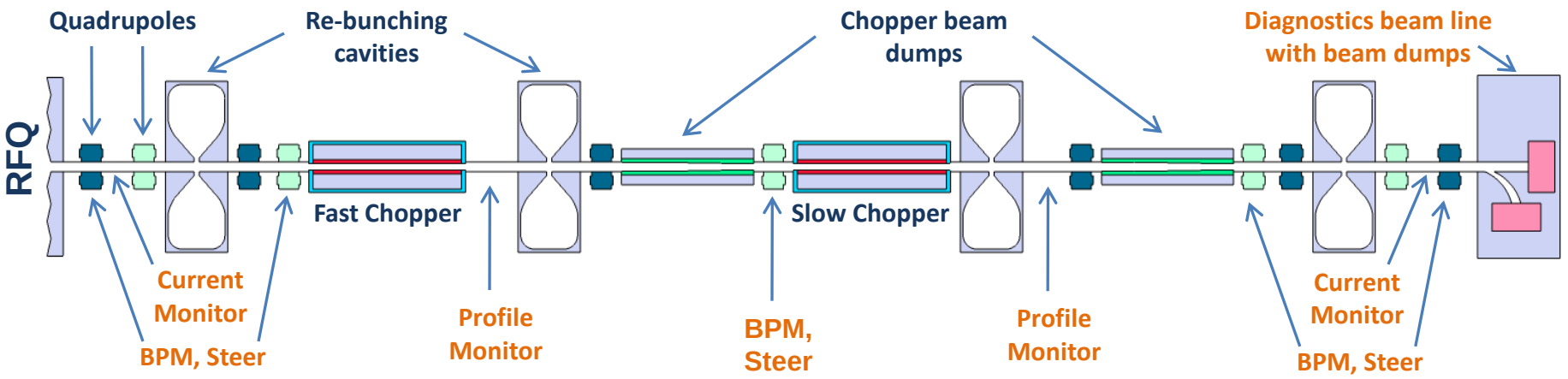
MEBT Update

FETS Meeting 2/2012

07/03/2012

Imperial College

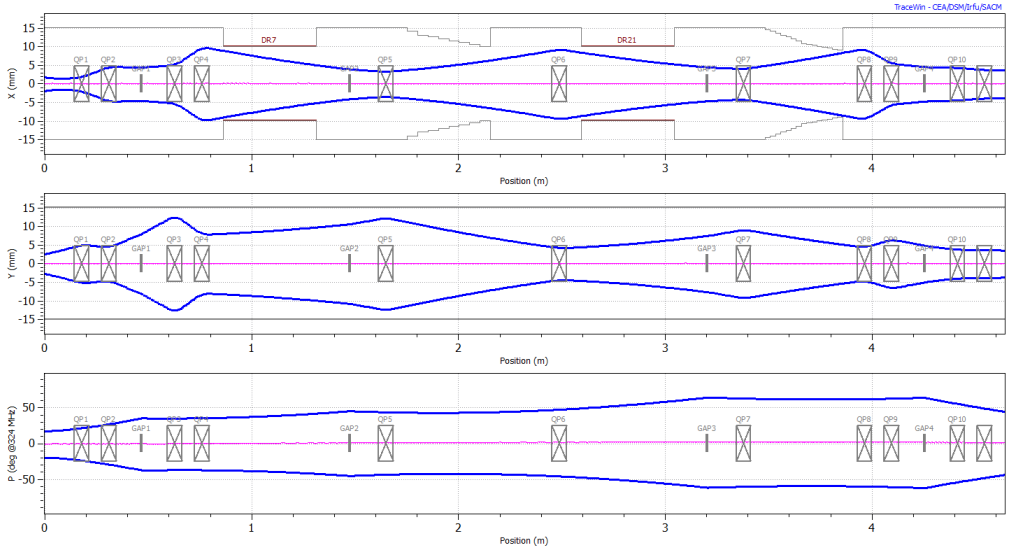
MEBT Line



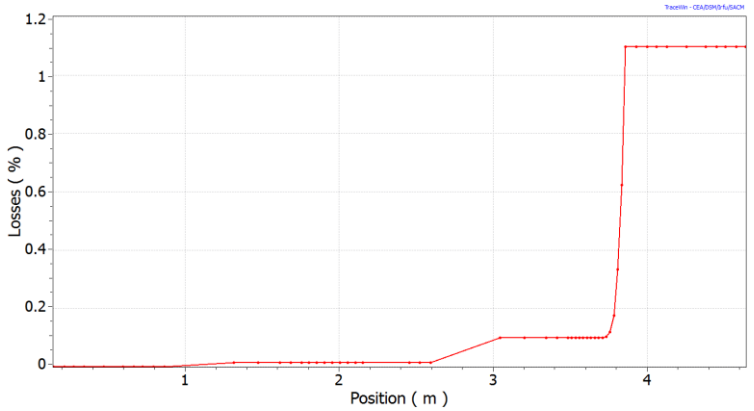
Example of a quadrupole configuration			
Q1 = 16.8 T/m	Q5 = 6.5 T/m	Q9 = 16.7 T/m	C1 = 115 kV
Q2 = -19.9 T/m	Q6 = -7.3 T/m	Q10 = -10.6 T/m	C2 = 63 kV
Q3 = 20.9 T/m	Q7 = 6.2 T/m	Q11 = 8.9 T/m	C3 = 54 kV
Q4 = -18.1 T/m	Q8 = -16.6 T/m		C4 = 43 kV

Beam Pipe

- Case 1
  - 30 mm beam pipe aperture.
  - Using “design” beam distribution.

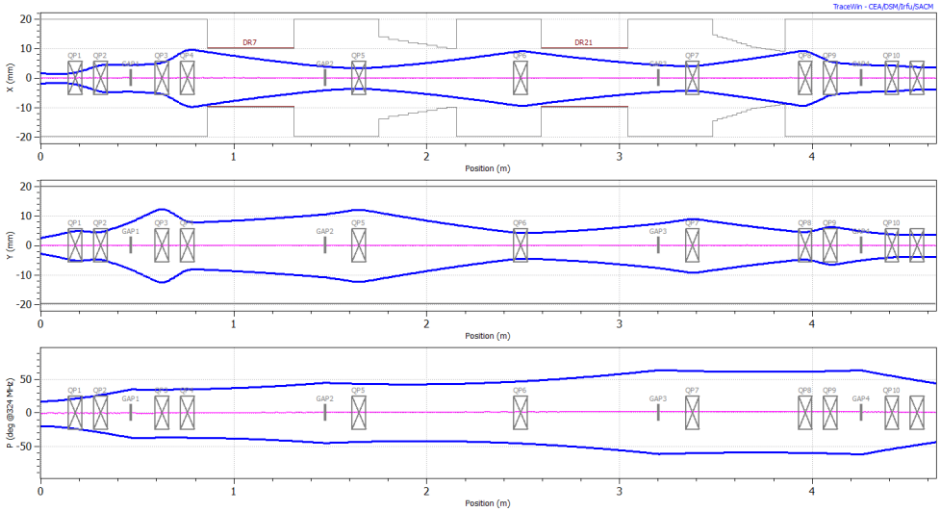


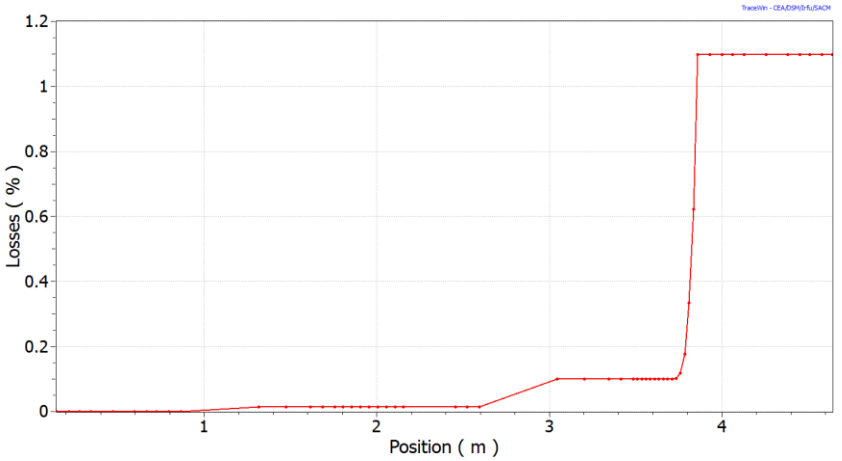
Input Distribution	
Ex	0.27 Pi.mm.mrad
Ey	0.27 Pi.mm.mrad
Ez	0.34 Pi.mm.mrad



Beam Pipe

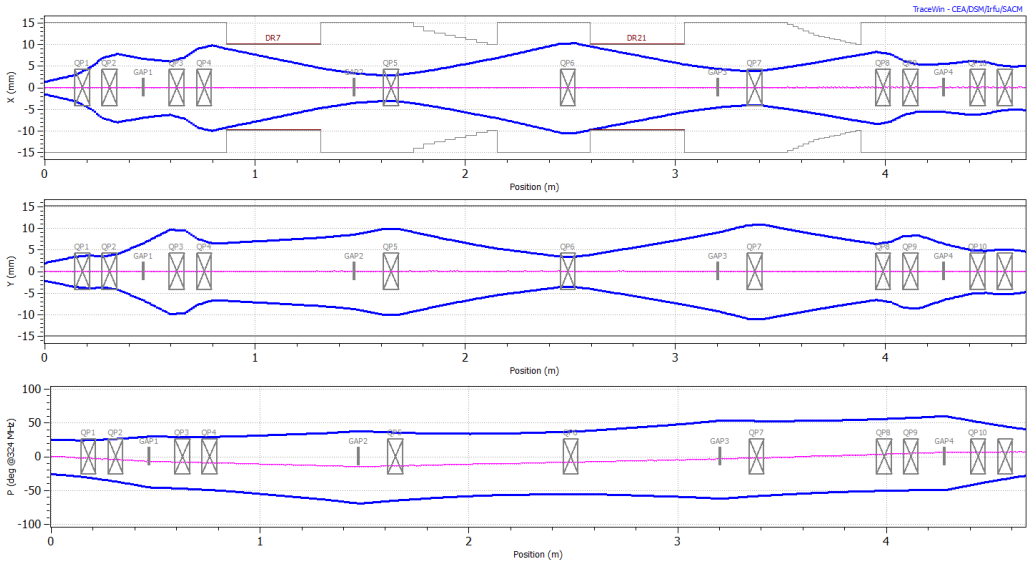
- Case 2
  - 40 mm beam pipe aperture
  - Using “design” beam distribution



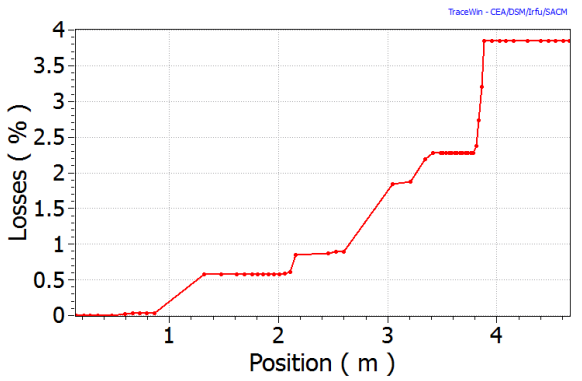


Beam Pipe

- Case 3
  - 30 mm beam pipe aperture
  - Using FETS RFQ output distribution

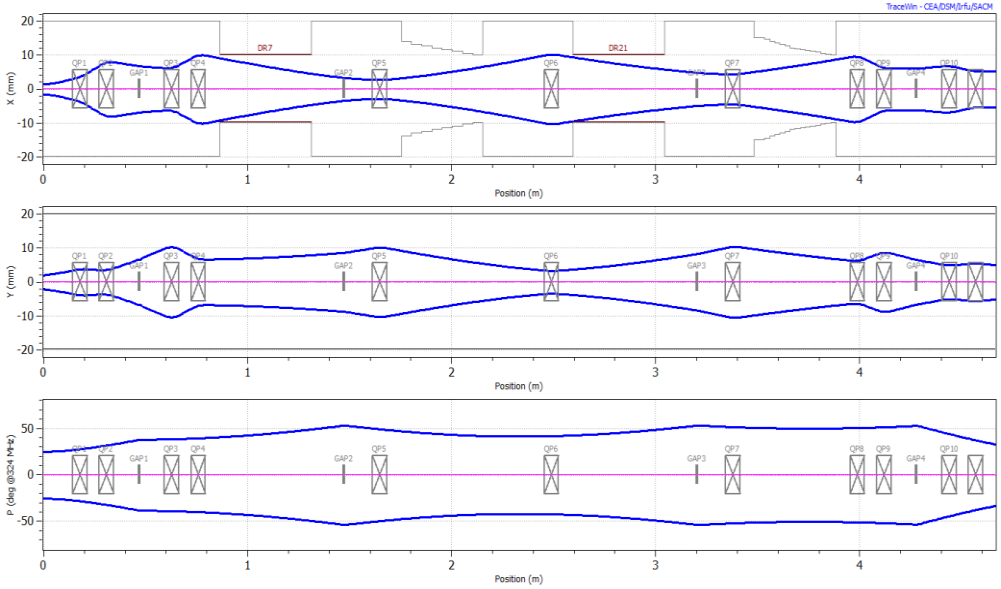


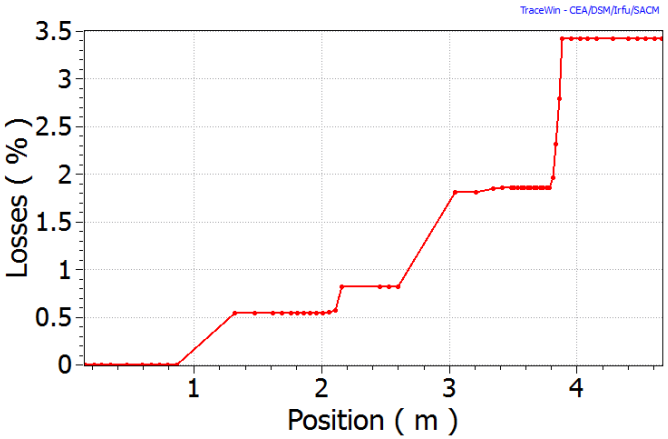
Input Distribution	
Ex	0.30 Pi.mm.mrad
Ey	0.31 Pi.mm.mrad
Ez	0.49 Pi.mm.mrad



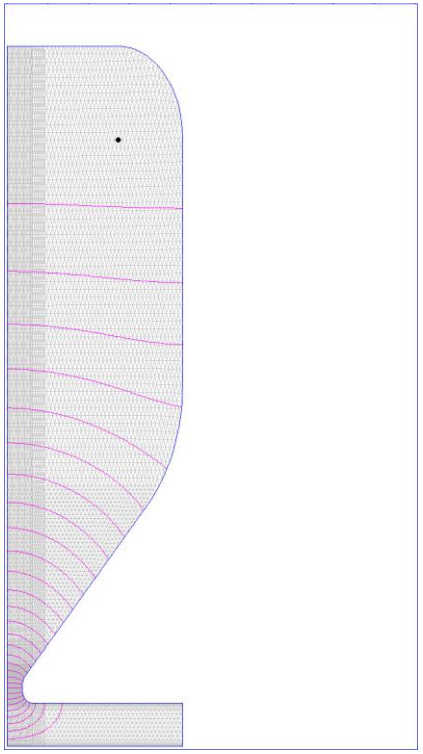
Beam Pipe

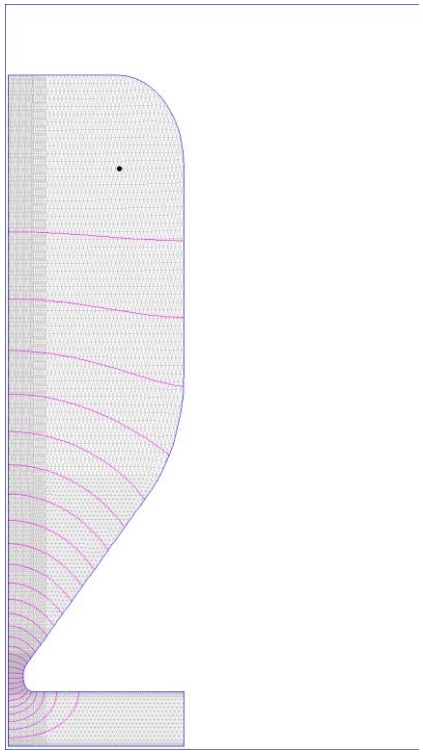
- Case 4
  - 40 mm beam pipe aperture
  - Using FETS RFQ output distribution





Bunchers





Aperture (mm)	30	38
Freq (MHz)	324	324
Q	26539	25536
ZTT (MOhm/m)	10.98	6.65
T	0.61	0.50
Power (kW)	13.54	22.36
Kilp	1.332	1.63
Effective Voltage (kV)	160	160

Chopper Clarification

- RFQ Distribution
- Beam Current
- Voltage
- Coverage Factor
- Safety margins

Removing End Matching Section?