

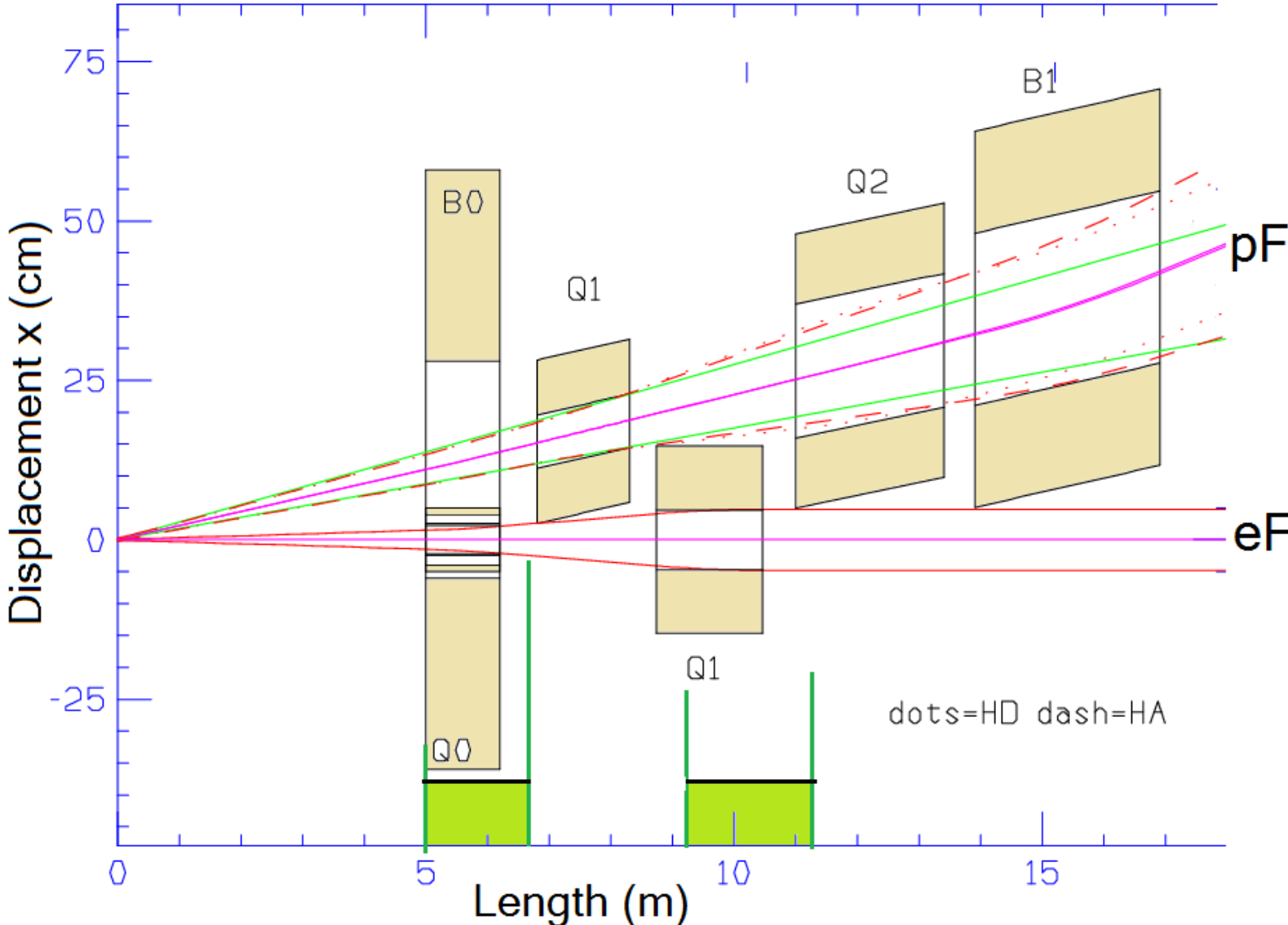
Dec 17 IR Update

12/8/17

Bob Palmer

- Forward Detail and Mag Parameters
- Synchrotron Fan
- Rear Layout and Mag Parameters
- Vacuum System
- Rear Flanges
- Tagger Tracks

New forward Detail



Hadron Forward Magnet Parameters

Hadron 275 GeV

		L1	DL	gap	x	θ	IR	OR	B	Grad)
		m	m	m	cm	mrad	cm	cm	T	T/m
B0	3	5.00	1.20	0.60	11.0	0.00	17.00	47.0	1.26	0.000
Q1	5	6.80	1.50	2.70	15.4	22.00	4.20	12.8	5.641	-131.02
Q2	7	11.00	2.40	0.50	26.4	20.00	10.50	21.5	4.622	44.11
B1	9	13.90	3.00	20.90	34.6	22.00	13.50	29.5	4.574	0.000
.90	3.00	20.90	34.6	22.00	13.50	29.5	4.574	0.000		

Red=Guillaume

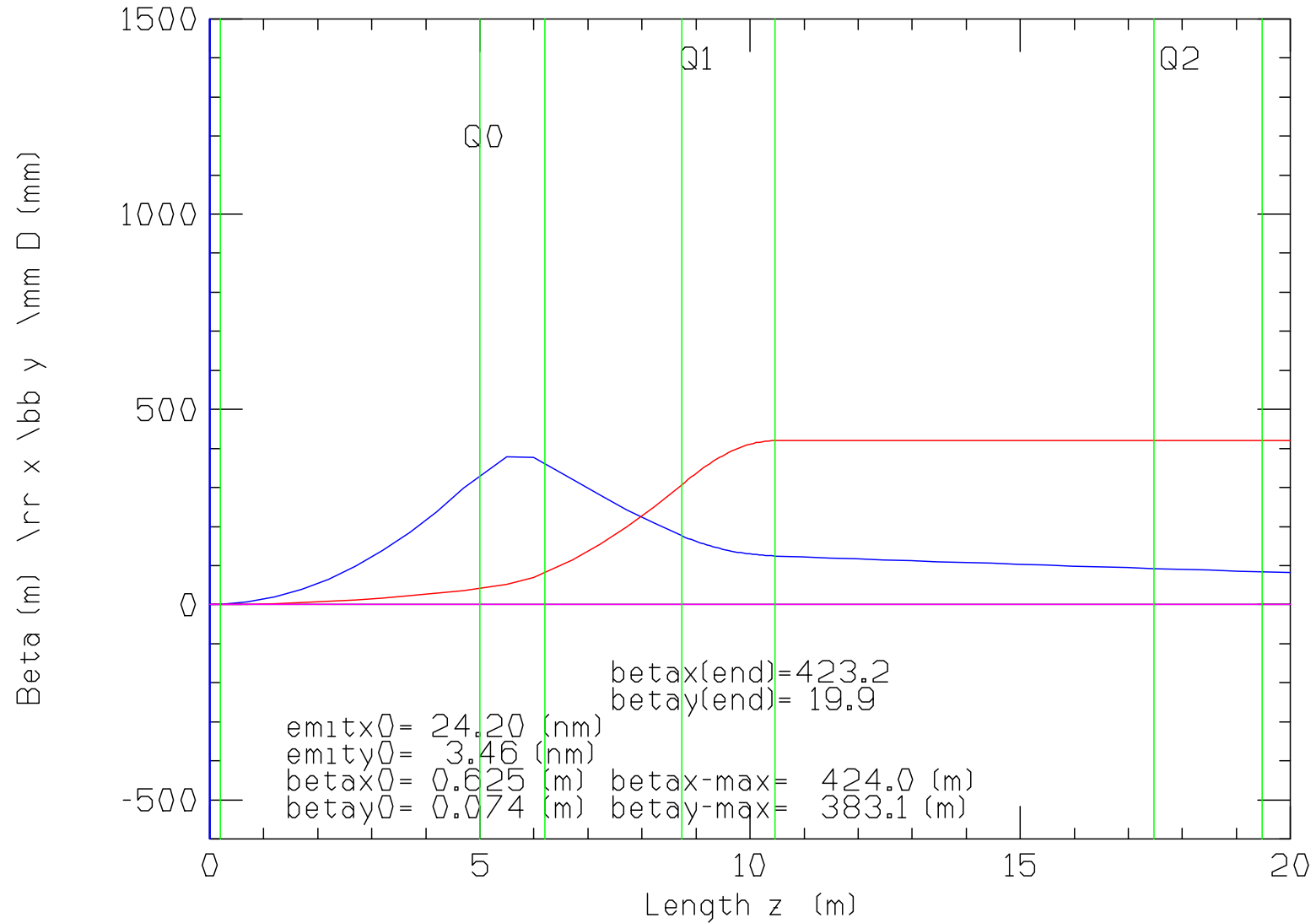
Electron 18 GeV

		L1	DL	gap	x	θ	IR	OR	B	Grad)
		m	m	m	cm	mrad	cm	cm	T	T/m
Q0	3	5.00	1.20	2.54	0.0	0.00	2.20	5.0	0.309	-14.061
Q1	5	8.74	1.72	7.02	0.0	0.00	4.70	14.7	0.282	5.996

New forward electrons betas

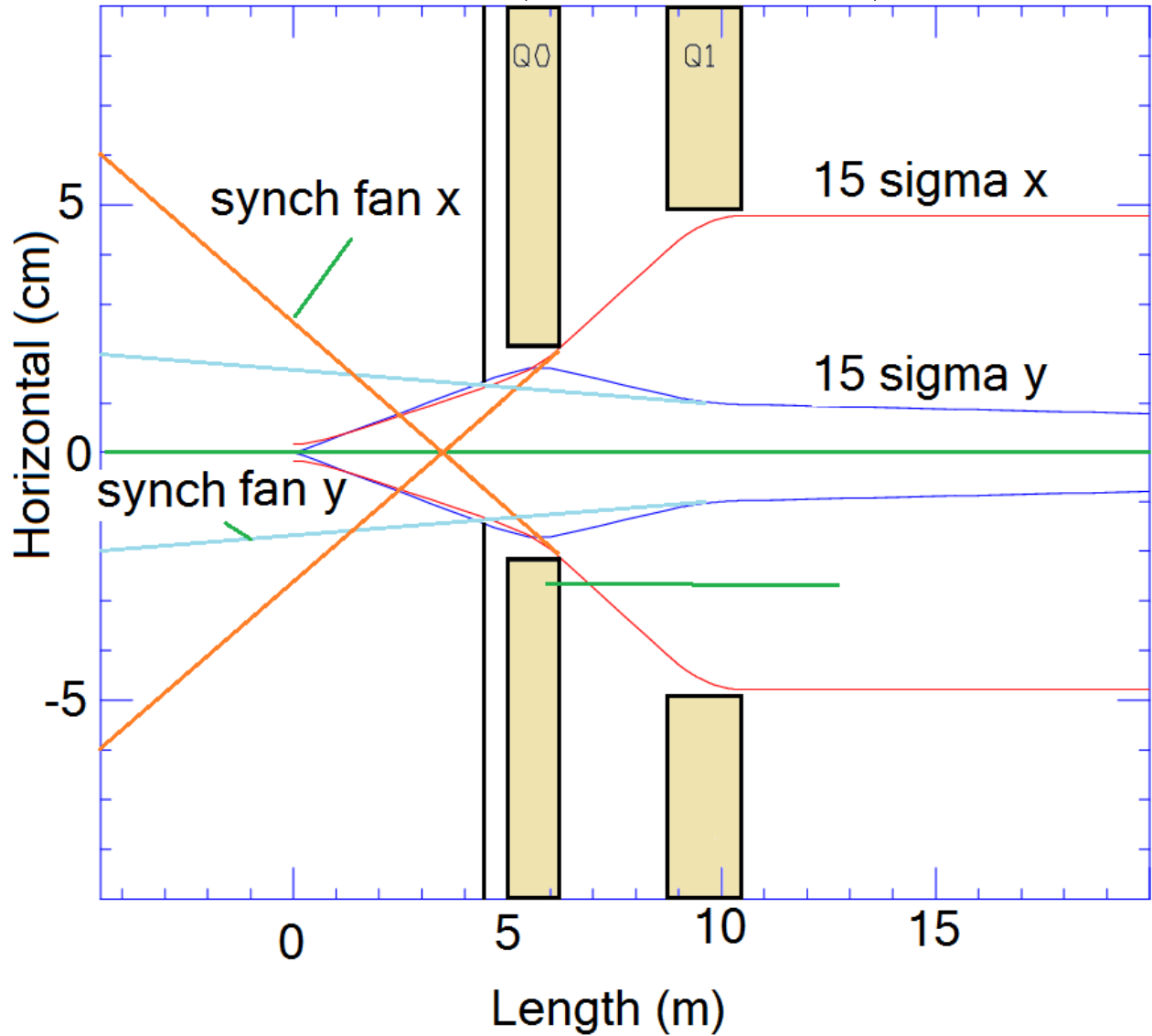
E=18 GeV

Nne NC140 Div = 3 Hadrons



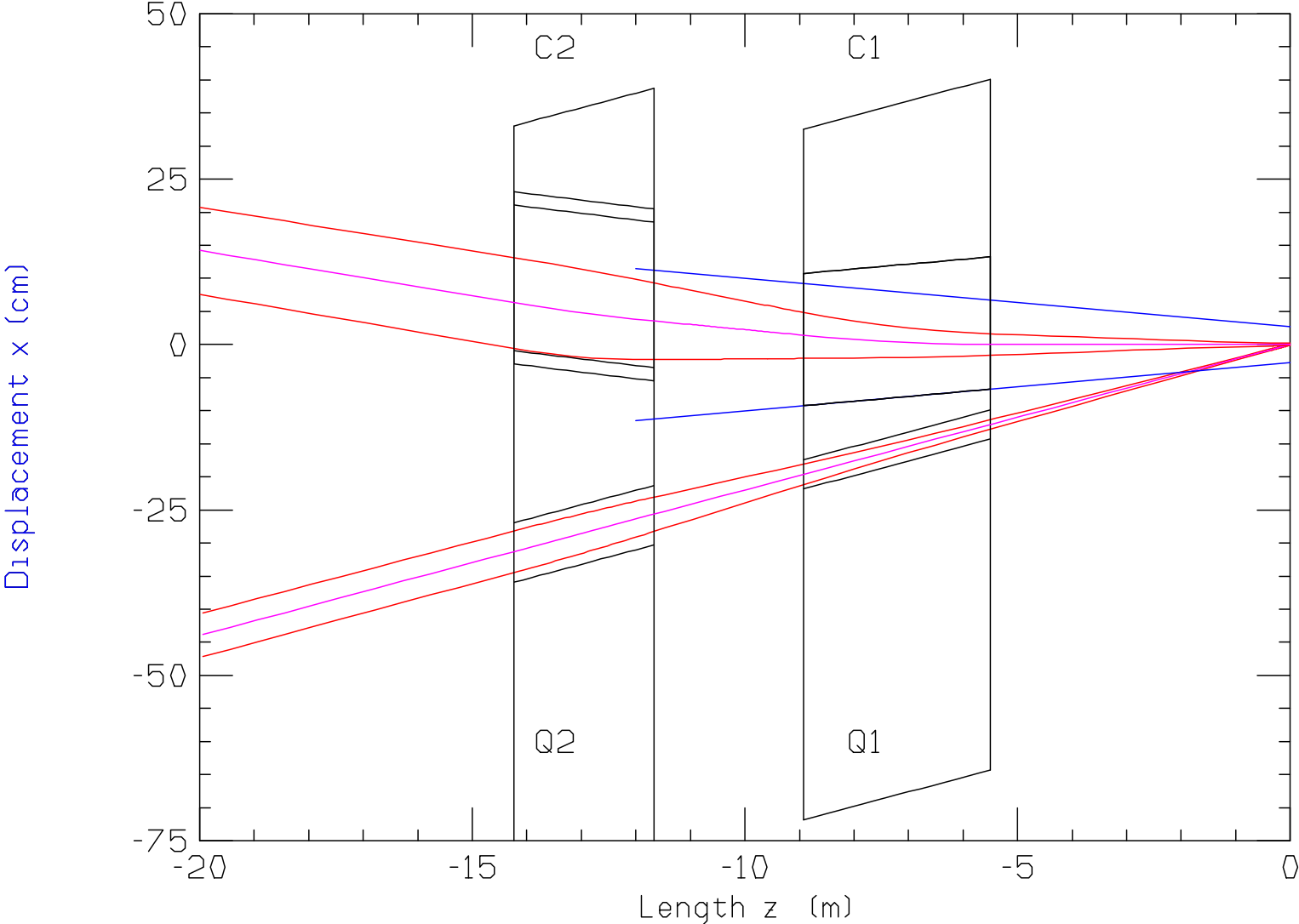
Electron amplitudes & Synchrotron Fan

Shown at 15 sigmas (red=x blue=y) synch fans also shown



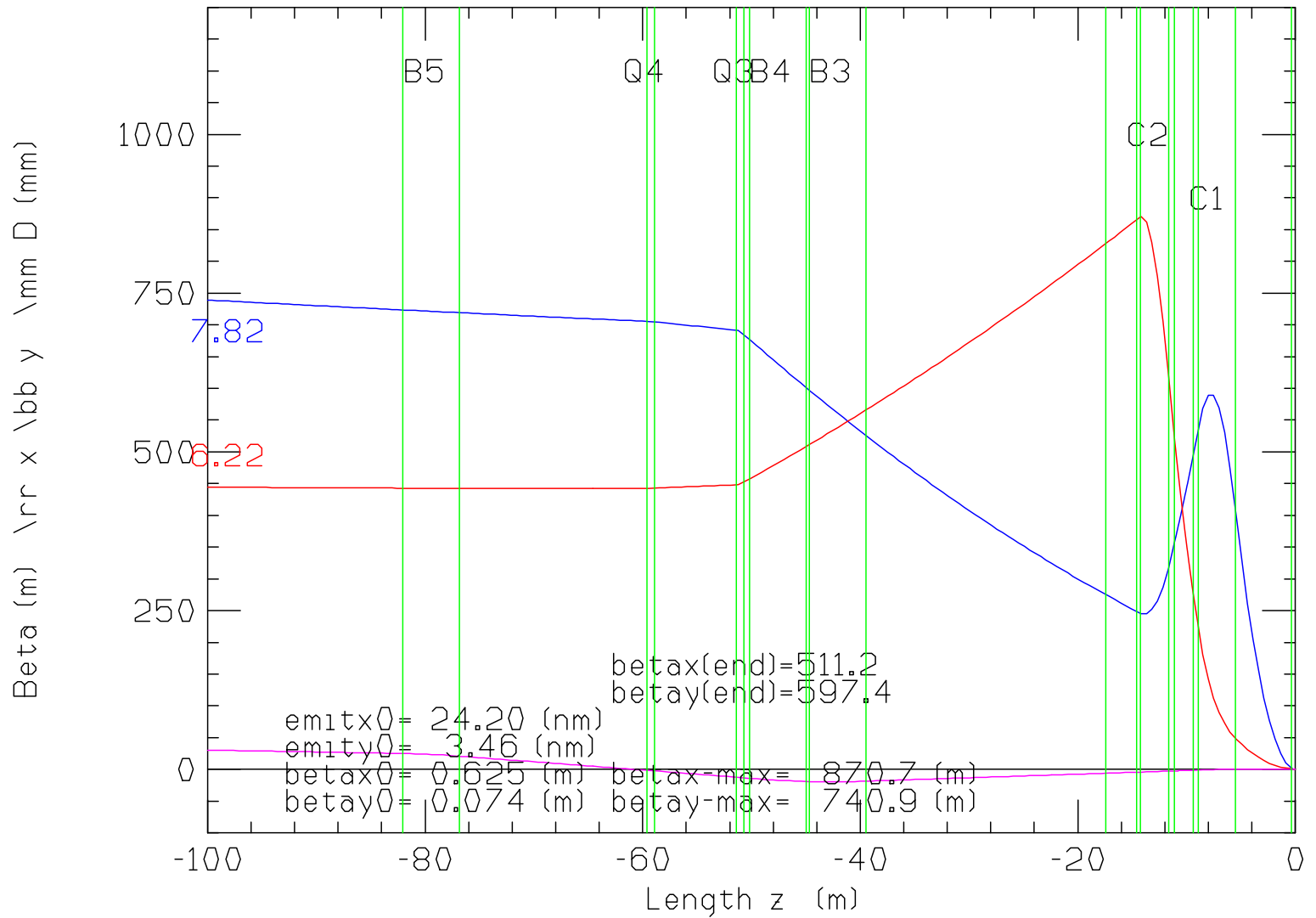
Rear Layout Detail

Nnb NC140



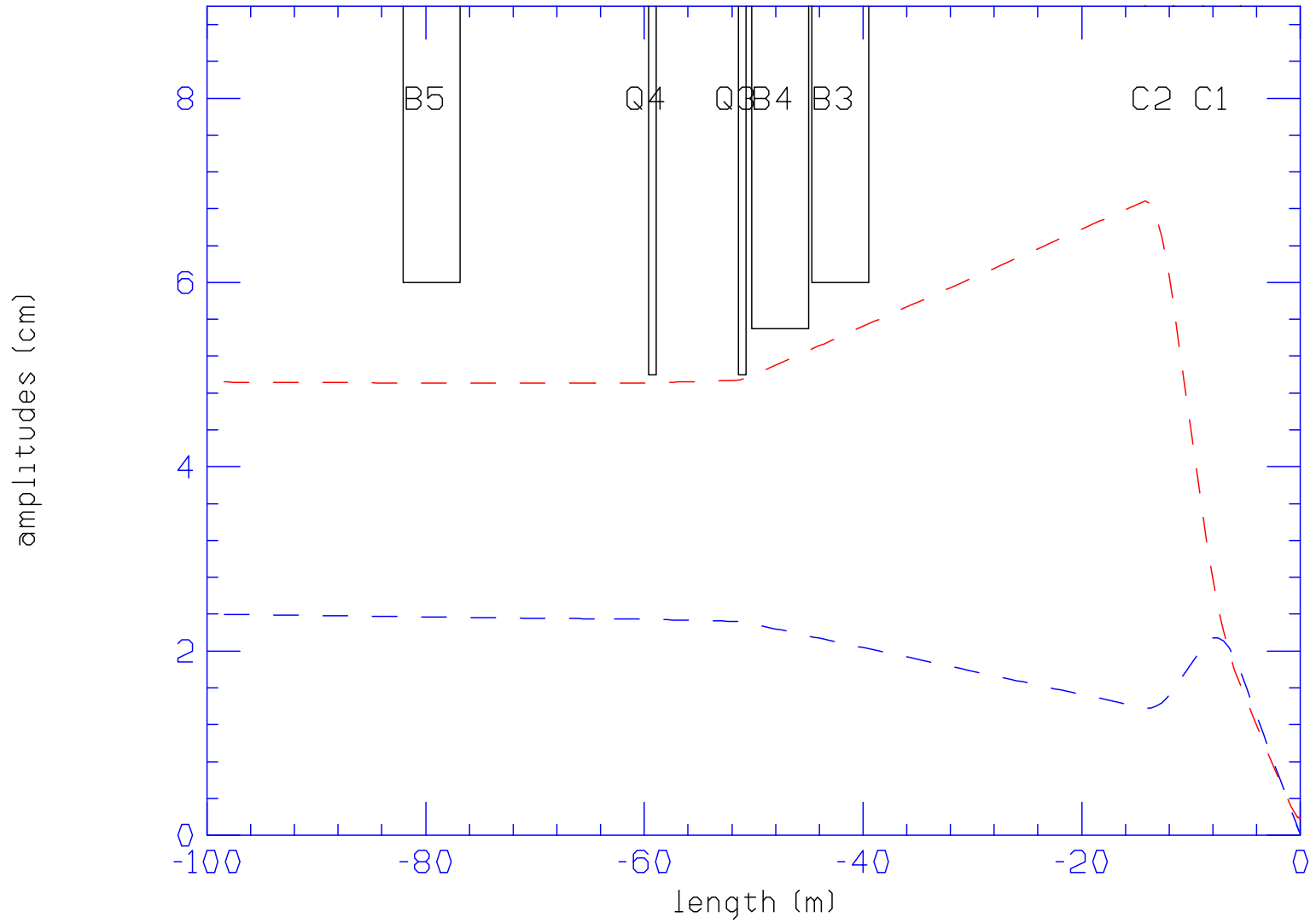
Rear e betas

Nne NC140 Div = 3 Hadrons



Rear e amplitudes

Nne NC140 Div = 3 Hadrons



Hadron Rear Magnet Parameters

Hadron 275 GeV

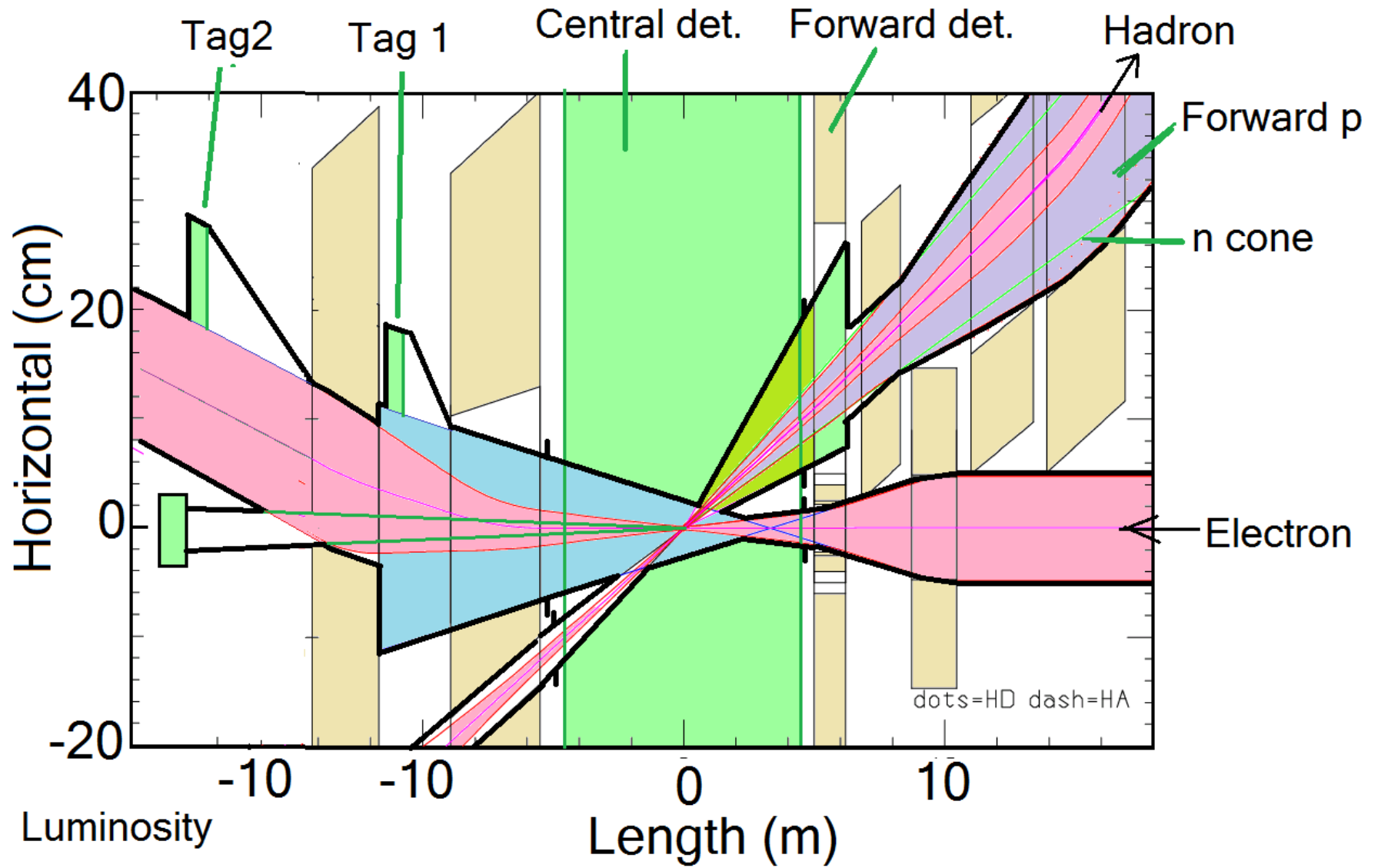
	L1	DL	gap	x	θ	IR	OR	B	B_{pt}	Grad)	
	m	m	m	cm	mrad	cm	cm	T	T	T/m	
Q1	3	4.50	2.80	2.25	-9.9	-22.00	2.20	32.2	0.000	2.097	-91.6 (-95.33)
Q2	5	9.55	2.10	2.20	-21.0	-22.00	3.00	43.0	0.000	2.200	51.4(73.33)
B1	7	13.85	2.80	0.40	-28.3	-22.00	4.00	44.0	0.000	0.000	20.09 (0.00)
Q3	9	17.05	1.20	21.40	-37.5	-23.00	4.00	27.0	0.000	0.917	-25.08 (-22.92)

Red=Guillaume

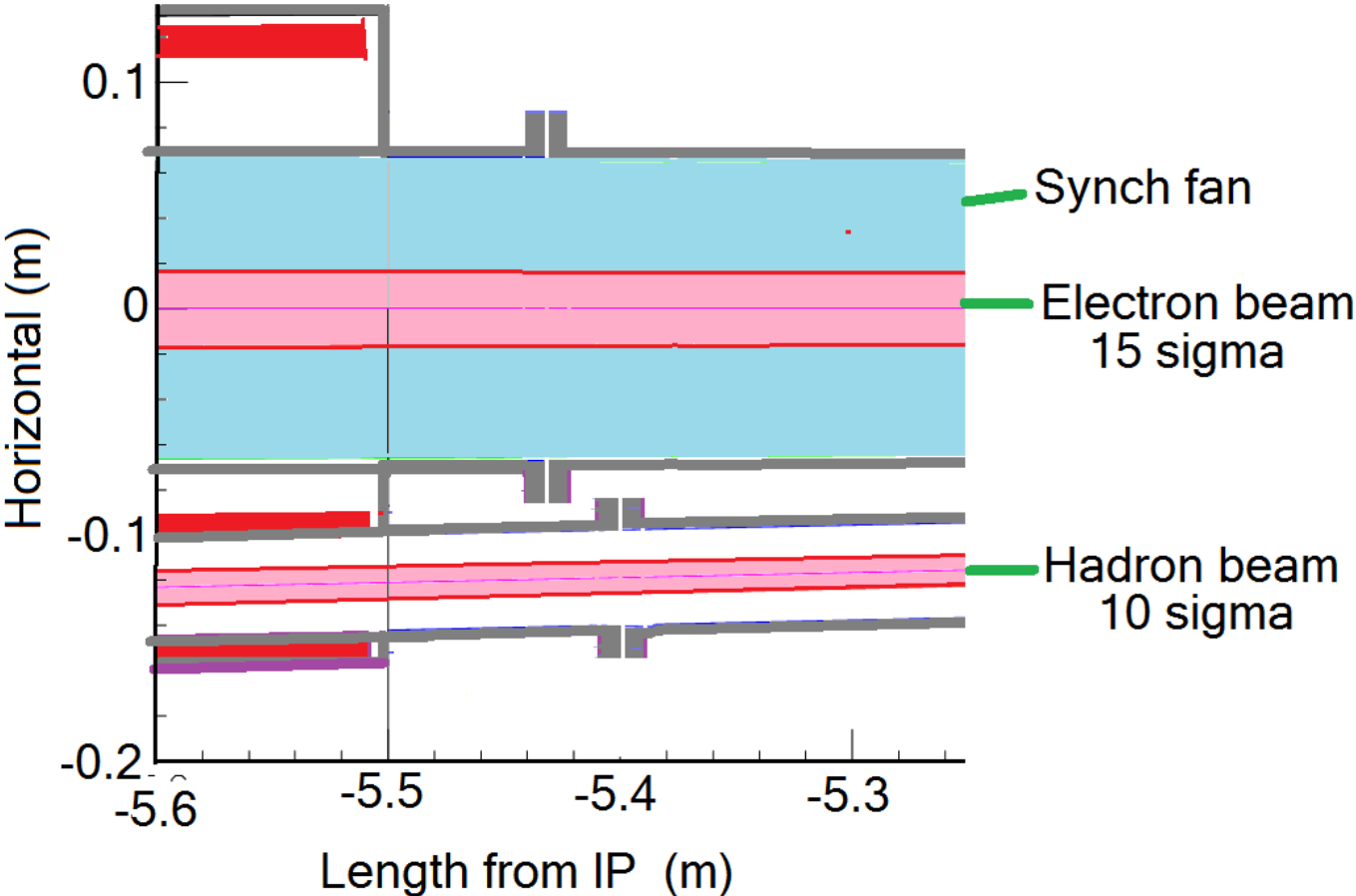
Electrons mom = 18 GeV

	L1	DL	gap	x	θ	IR	OR	B	B_{pt}	Grad)	
	m	m	m	cm	mrad	cm	cm	T	T	T/m	
C1	3	4.50	2.80	0.40	0.0	0.00	5.00	7.0	0.150	0.300	-6.000
B1	5	7.70	1.40	1.15	1.0	5.00	7.00	9.0	0.150	0.000	0.000
C2	7	10.25	1.40	0.30	3.5	10.00	7.00	9.0	0.150	0.462	6.600

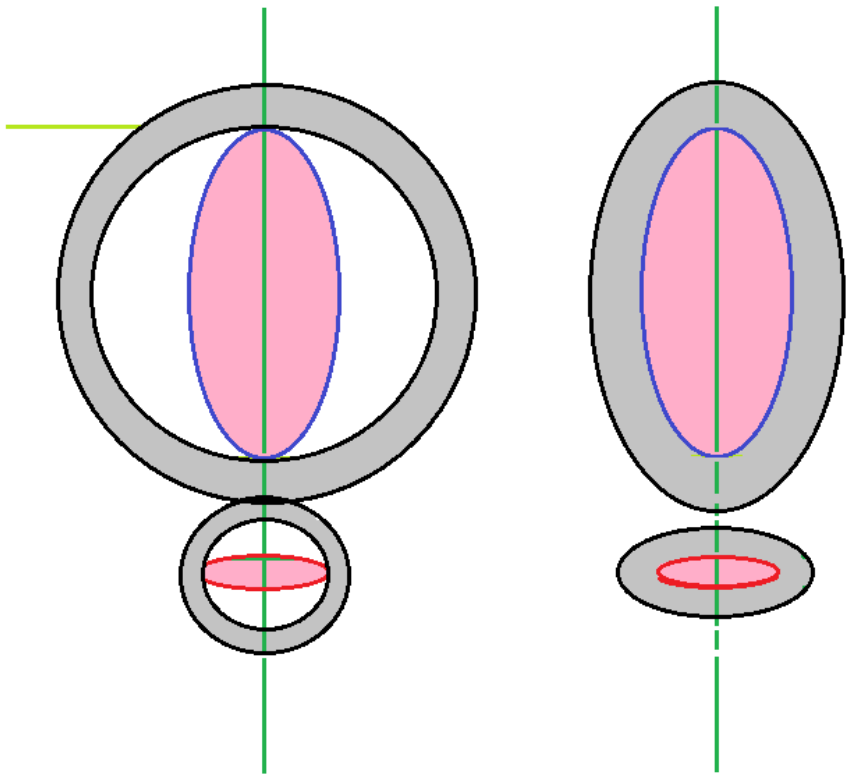
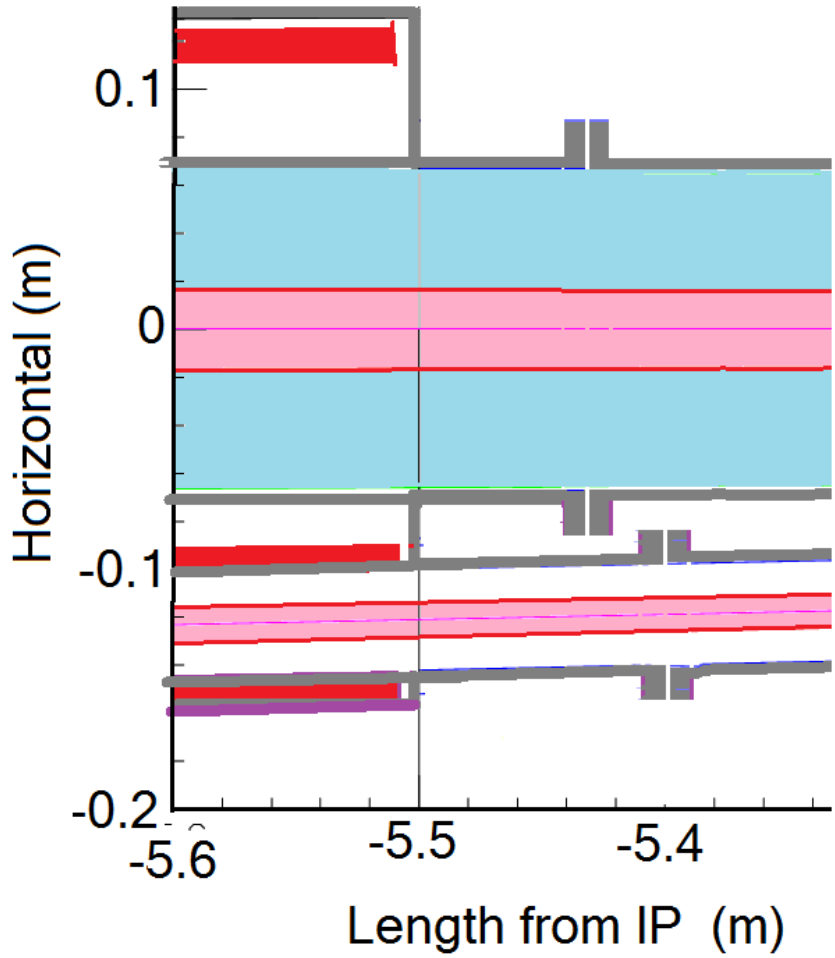
Vacuum Outline



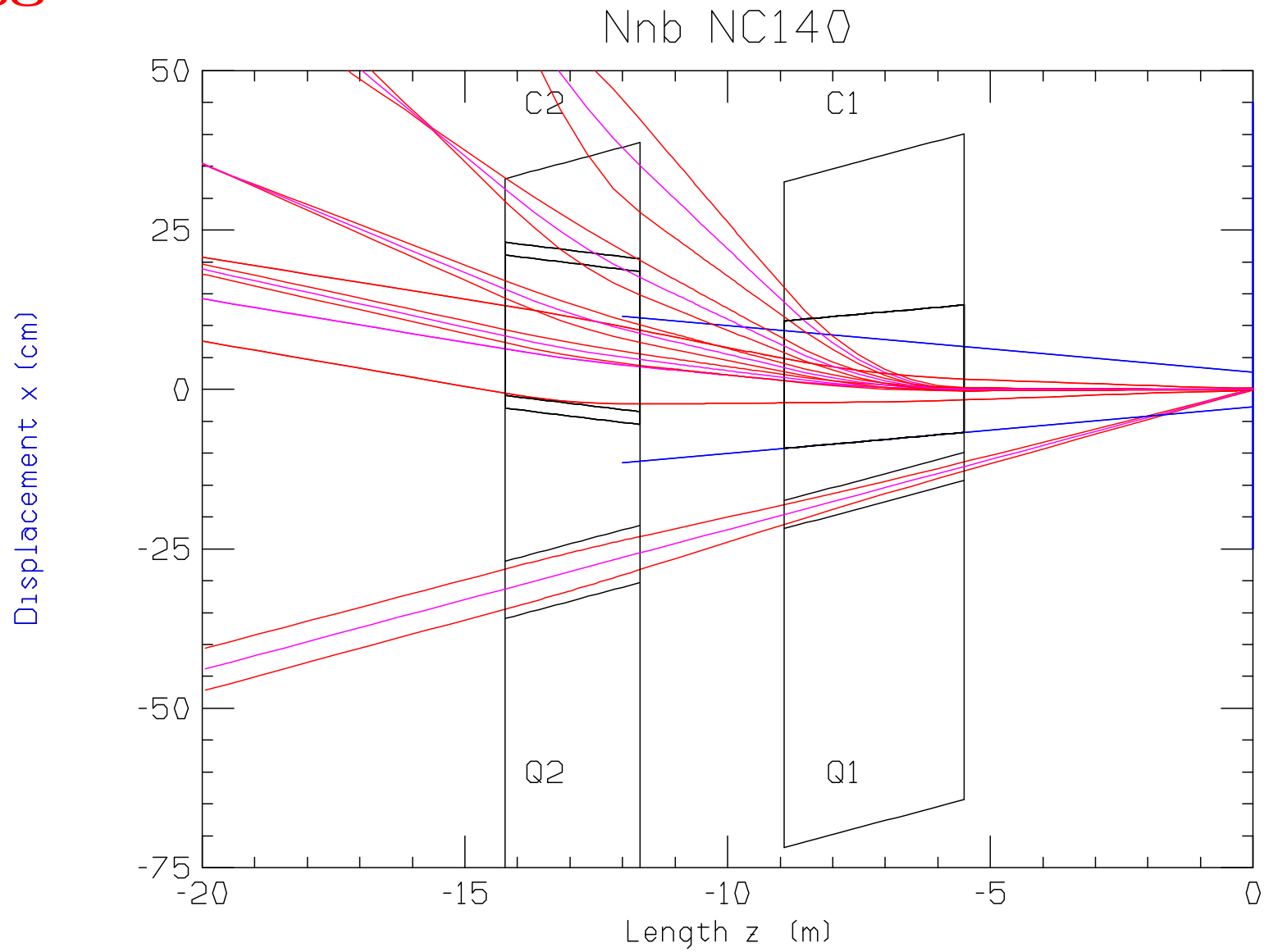
Flange Detail



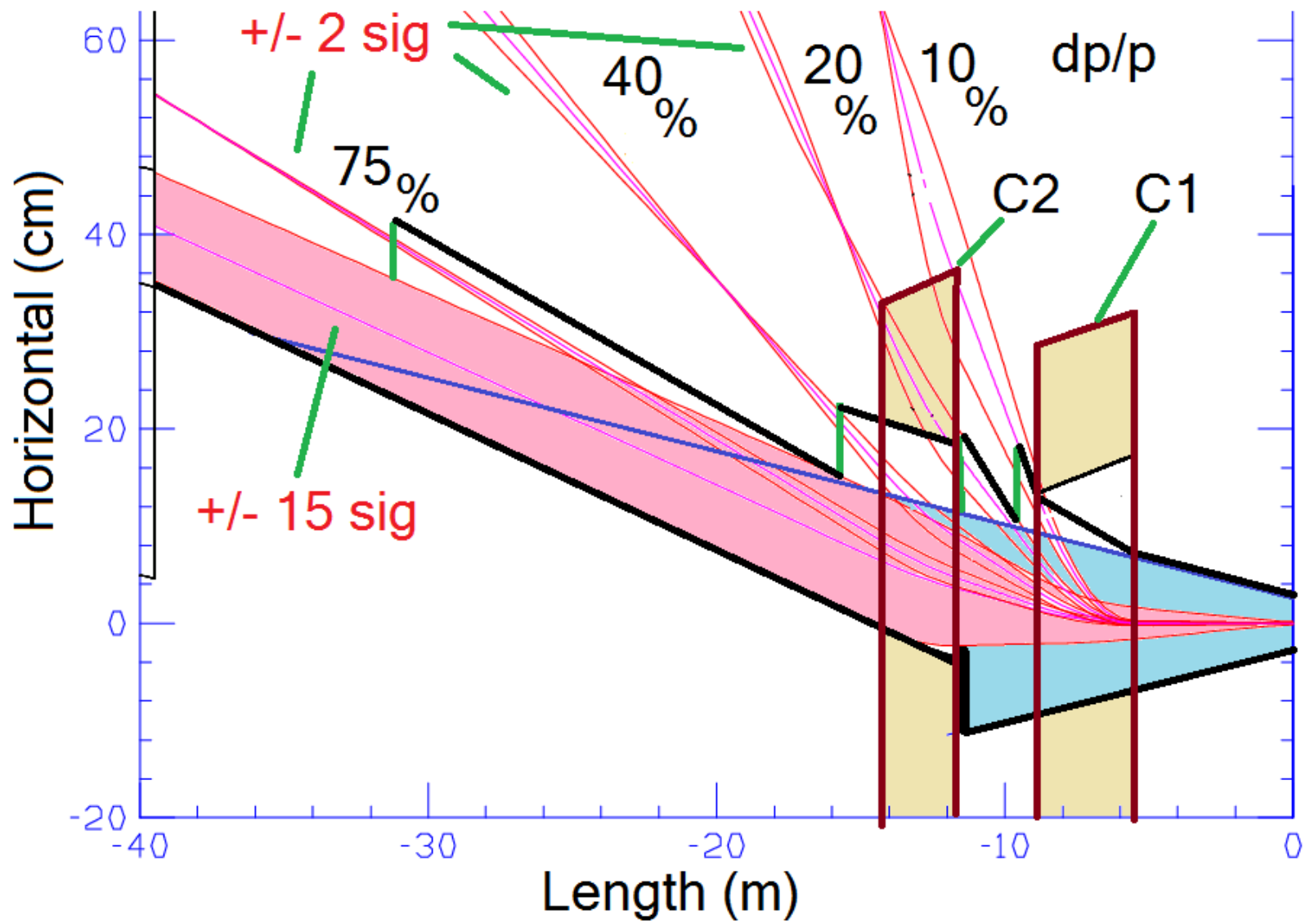
Flange Sections



Tagger Tracks



Tagger Design



Design of combined B0pf and Q0ef

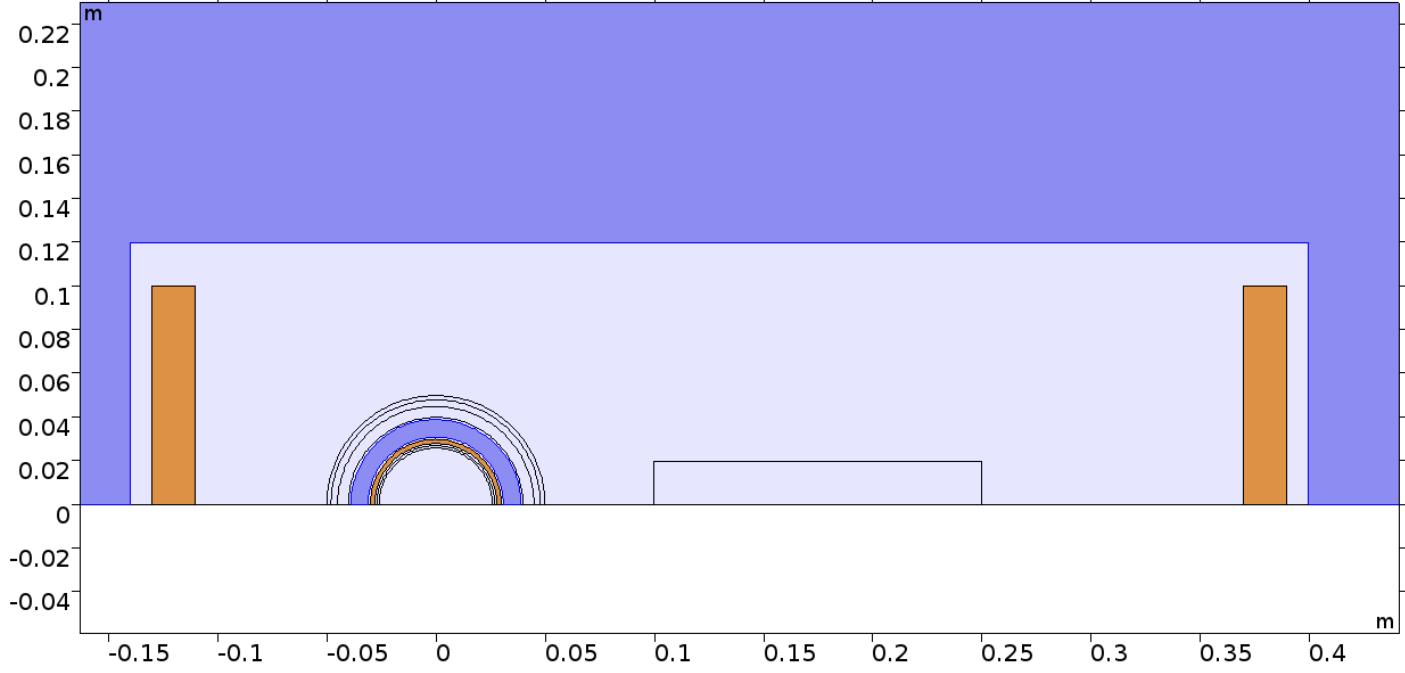
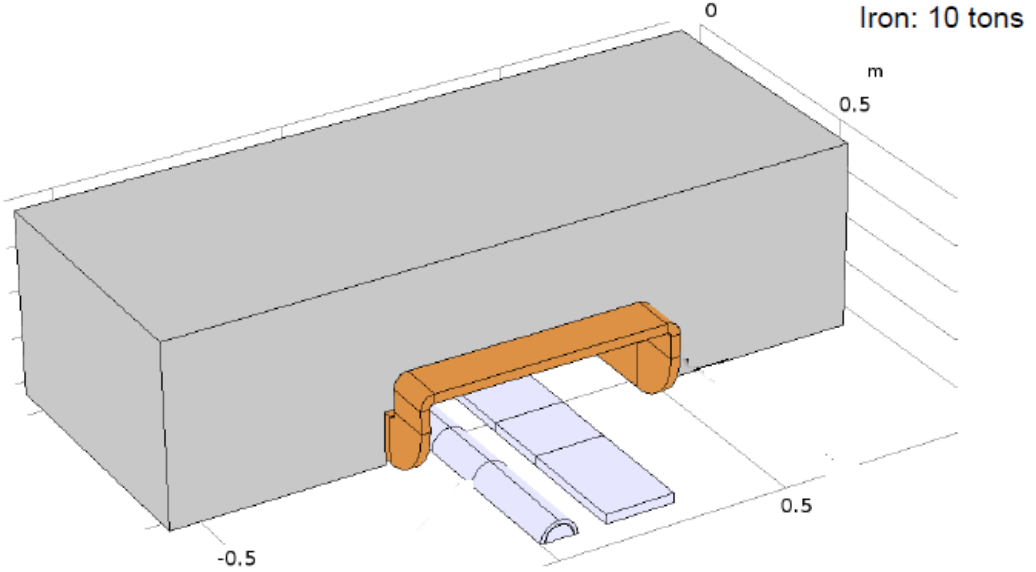
Assuming, as summerized by Elke, that

- Easy access to the detectors is not too high a priority
- Spectrometer detectors can operate cold (either 4 K or 77 K)

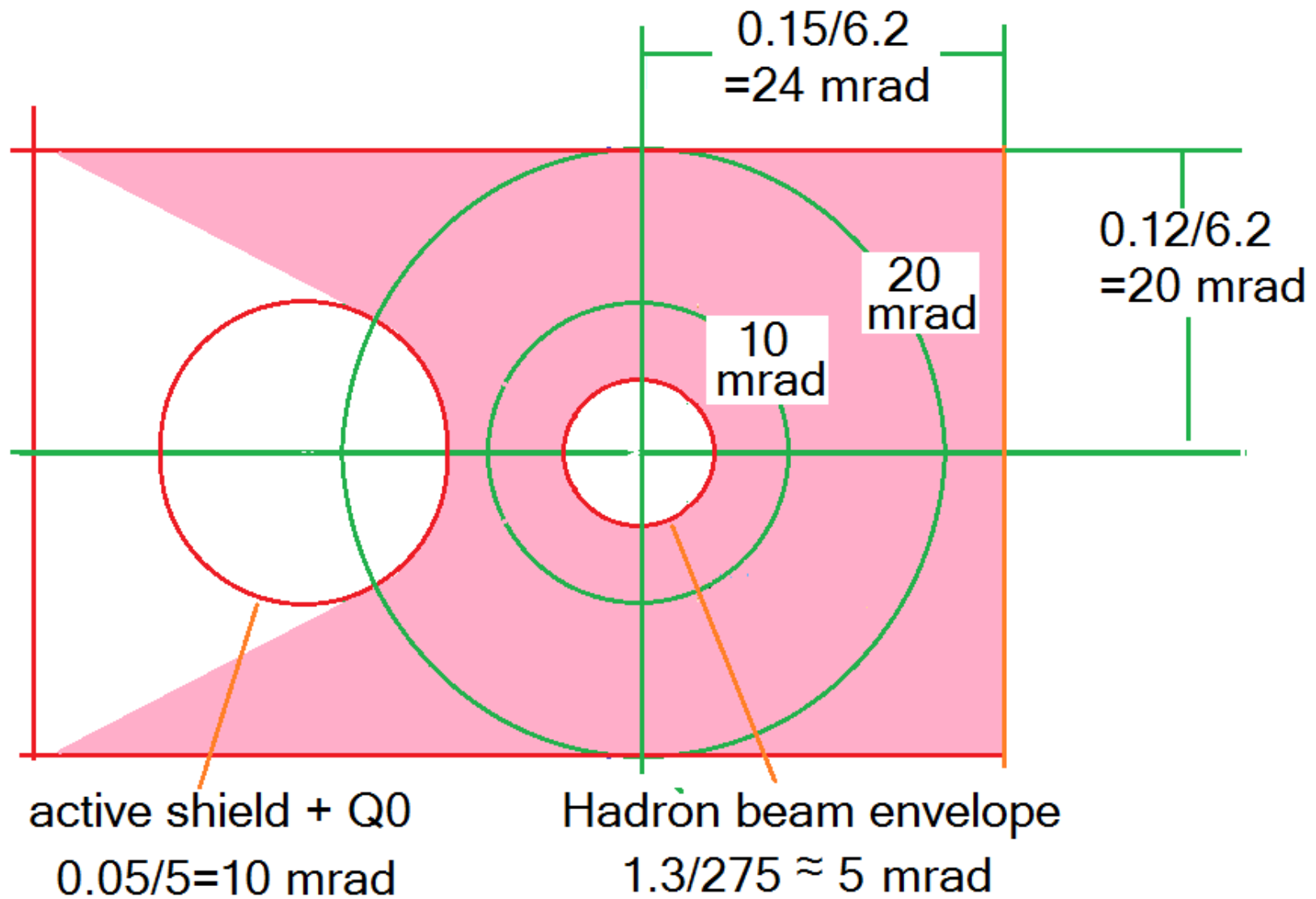
Then:

- Cold combined Active shield and SC quadrupole only 10 cm diameter (Holger)
- Can return to Holger's original B0 concept

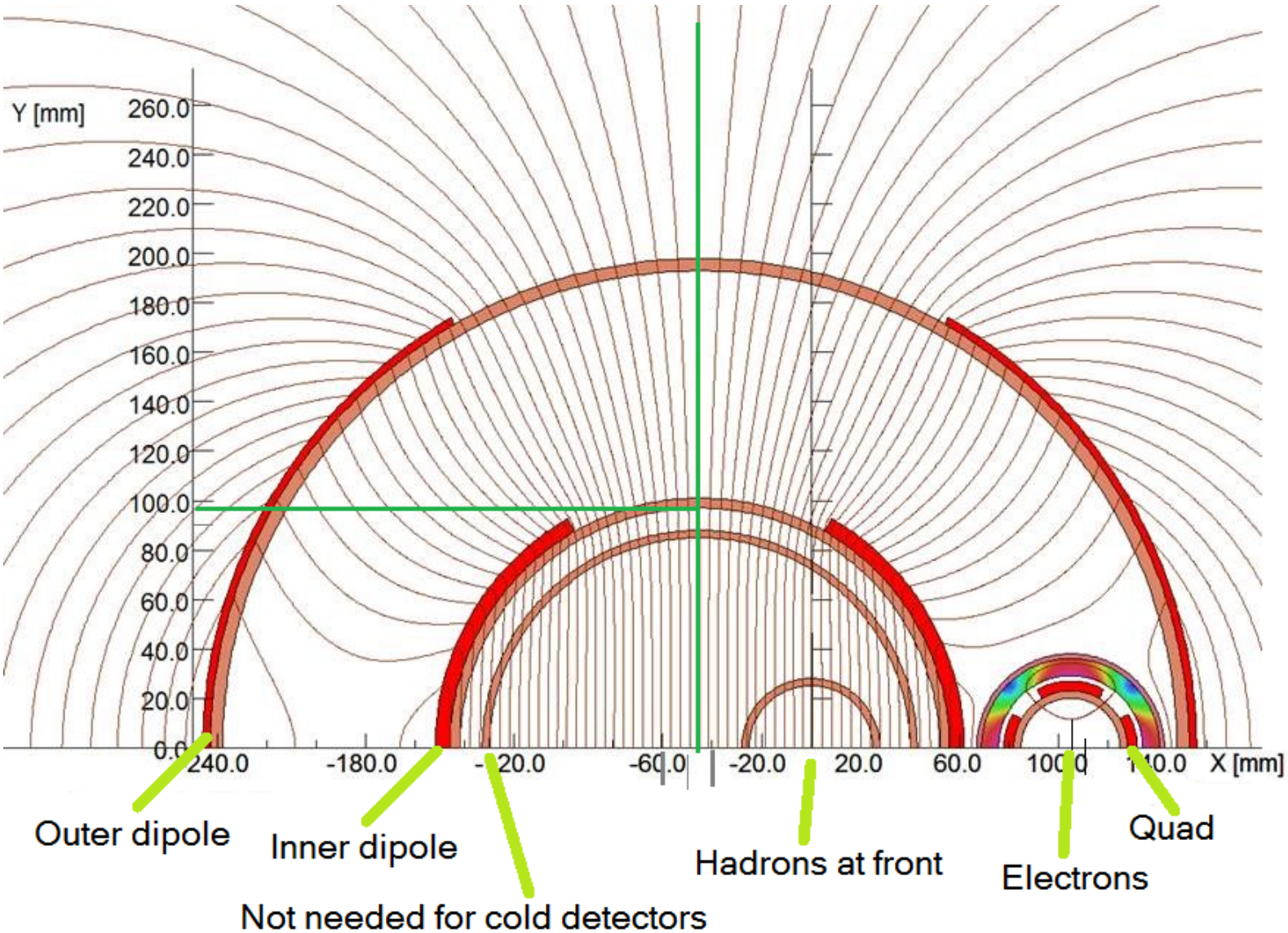
Holger's Original Concept



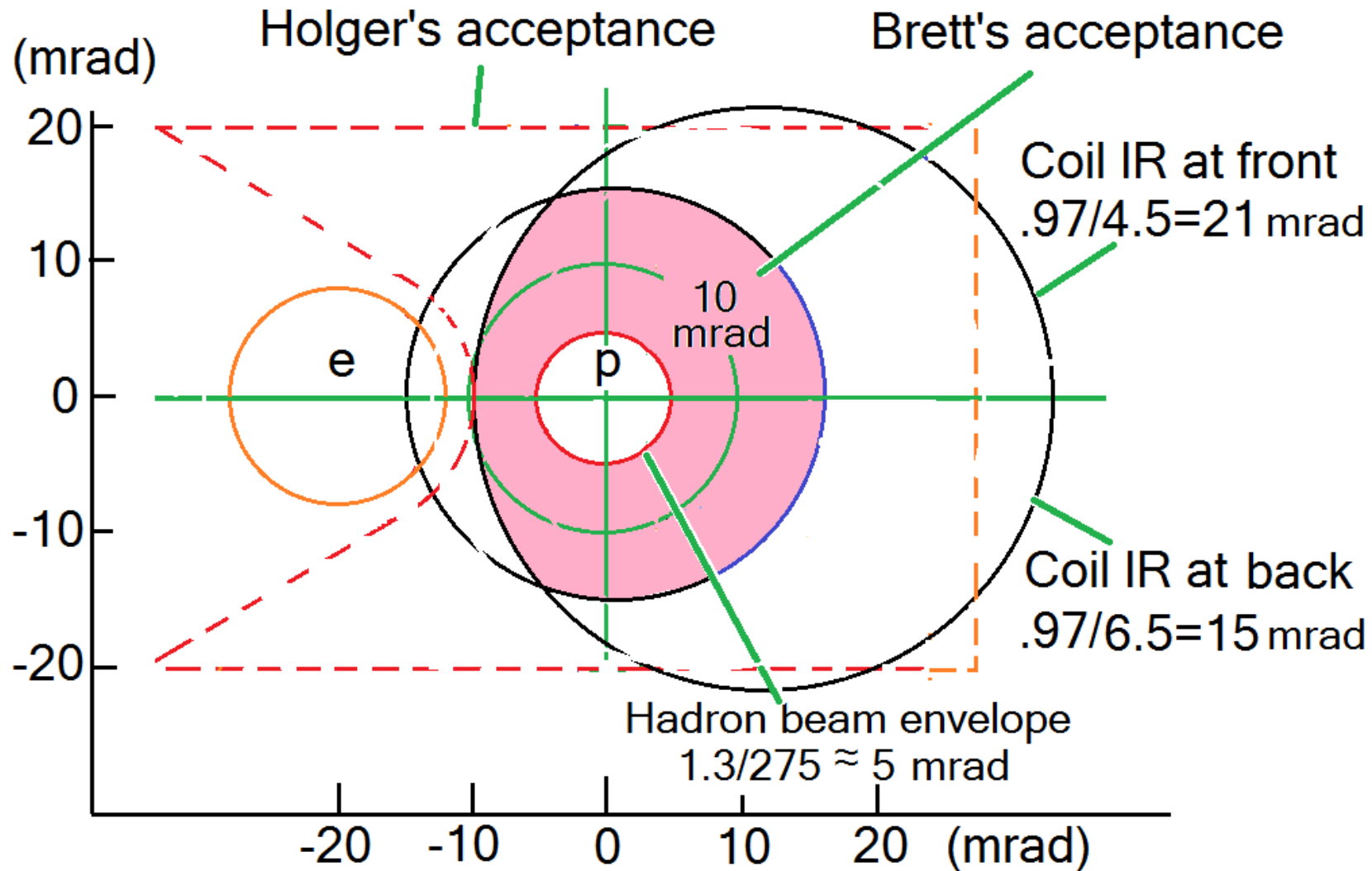
Projected angular acceptance



Brett's Version



Brett's Acceptance



Significantly less acceptance for a similar sized magnet