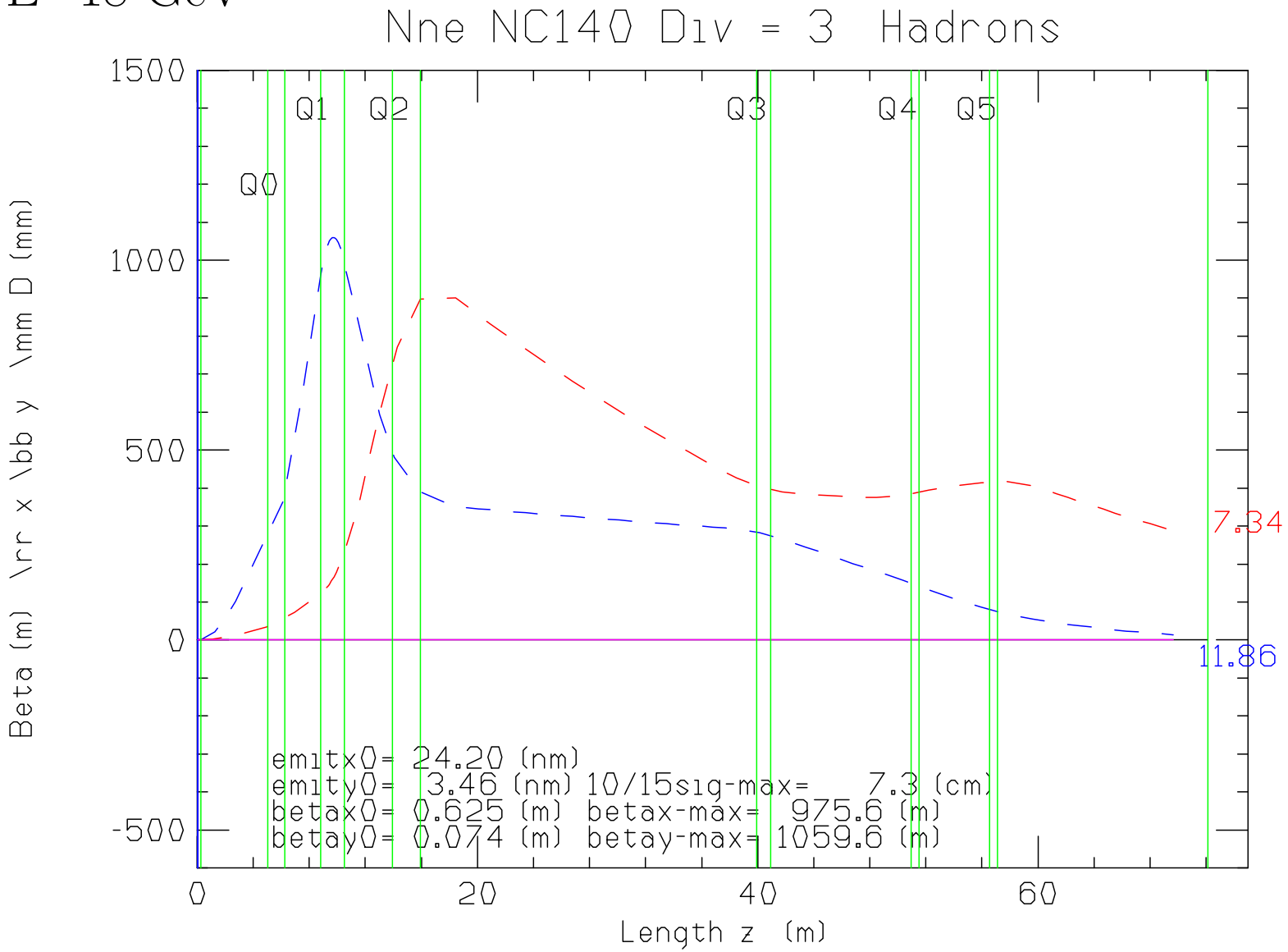
G0 ideas

11/3/17

Bob Palmer

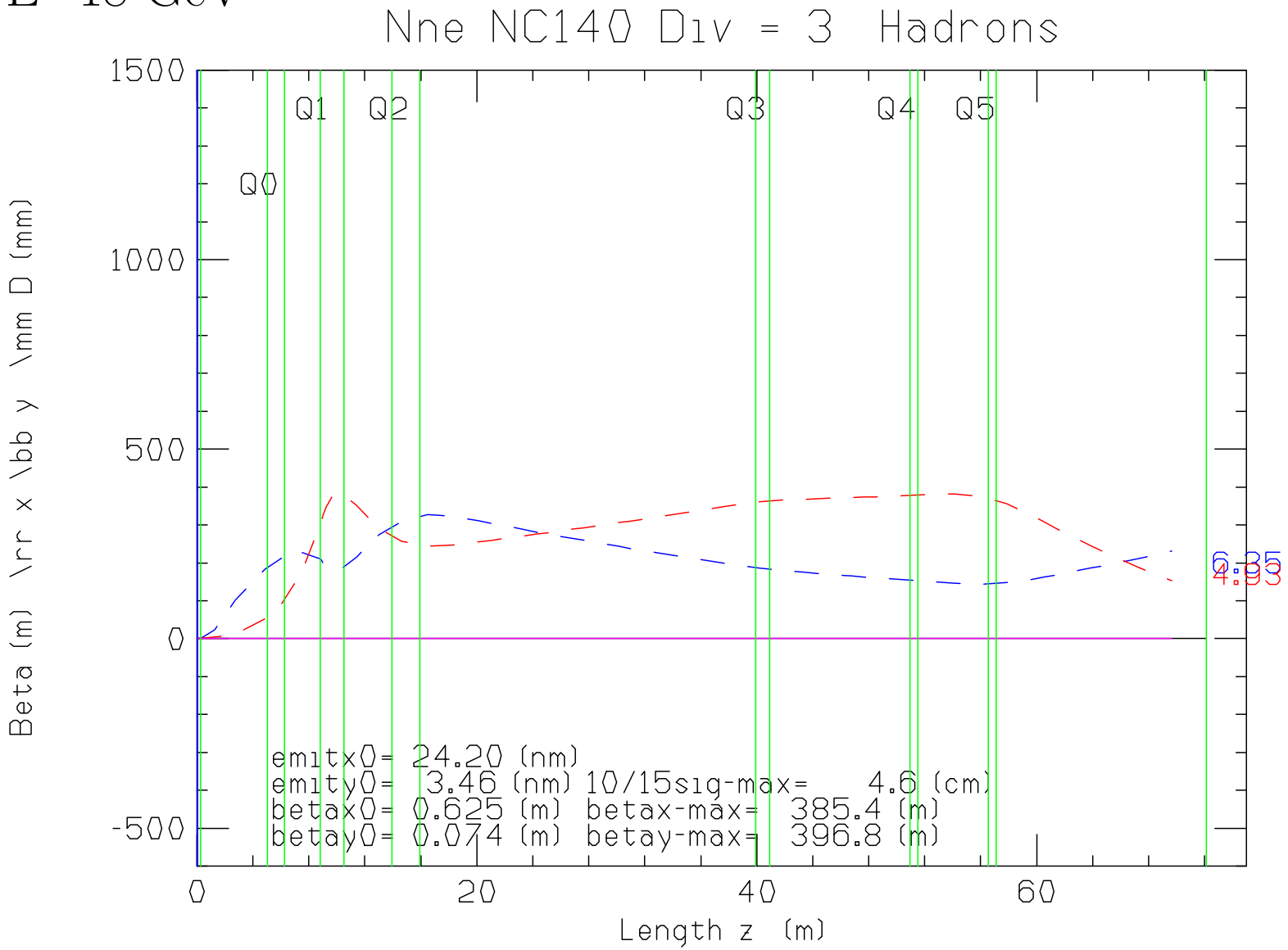
Old forward electrons

E=18 GeV



New forward electrons

E=18 GeV



Compare

E=18 GeV

	Old	New
Max beta x (m)	900	400
Max beta y (m)	1050	350
Chromaticity x	7.3	4.99
Chromaticity y	11.8	6.3

Gradients and fields

E(e) GeV	Grad T/m	B(p) T	Bmax T
18	13.4	1.65	3.3
10	7.4	0.92	1.8
5	3.7	0.46	0.9

Downsides

- Needs to be super-conducting
- With warm bore or cold electronics
- Very difficult access to detectors
- Low spectrometer field at low e energy

Fix

- Back to super-ferric 1.3 T open C dipole
- Back to fixed active dipole shield around electrons
- But with added adjustable quadrupole around electrons

Is this possible ?