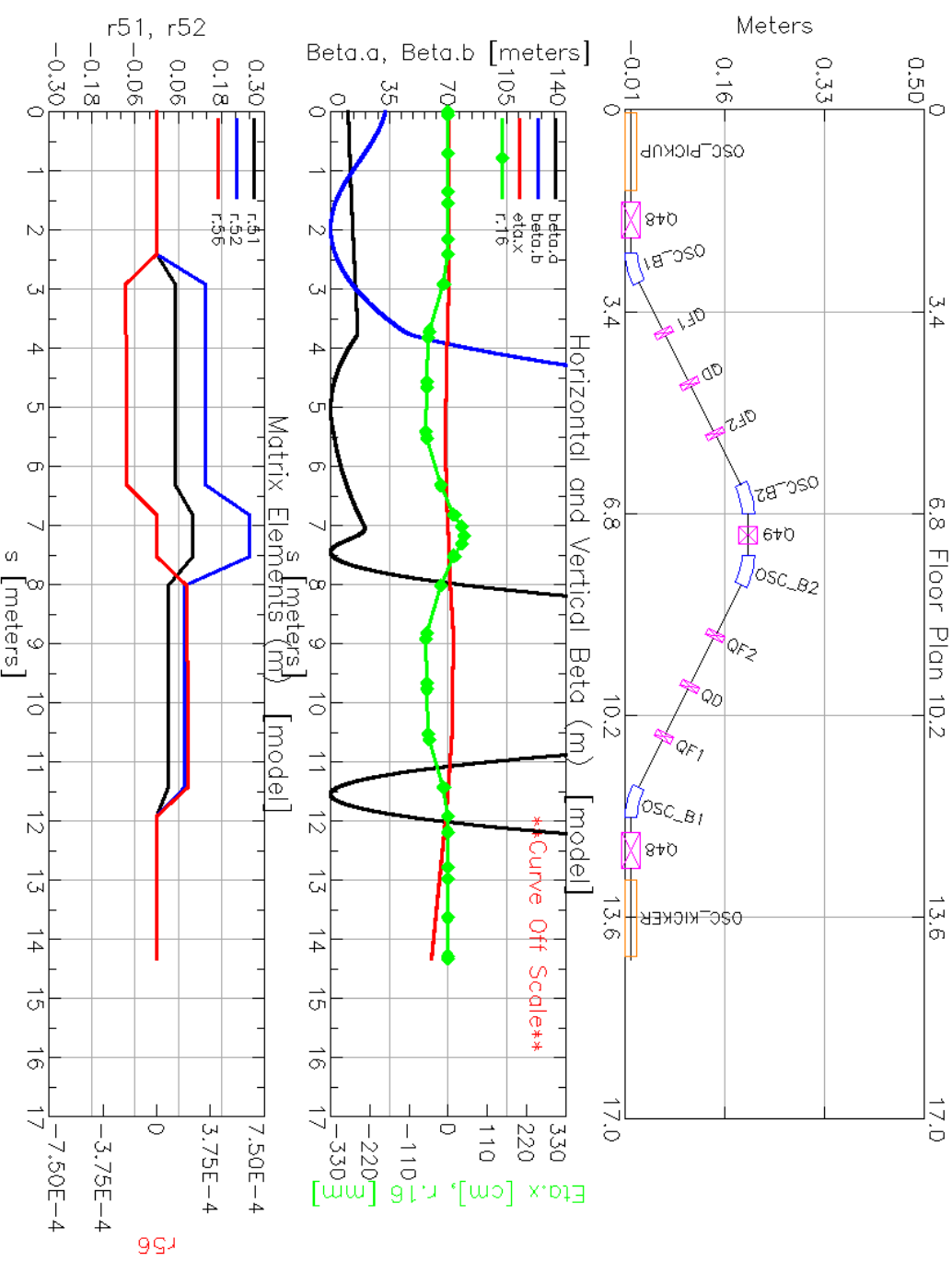Cornell Laboratory for
Accelerator-Based Sciences
and Education (CLASSE)

OSC isochronous quad strengths

Michael Ehrlichman

Typical Result
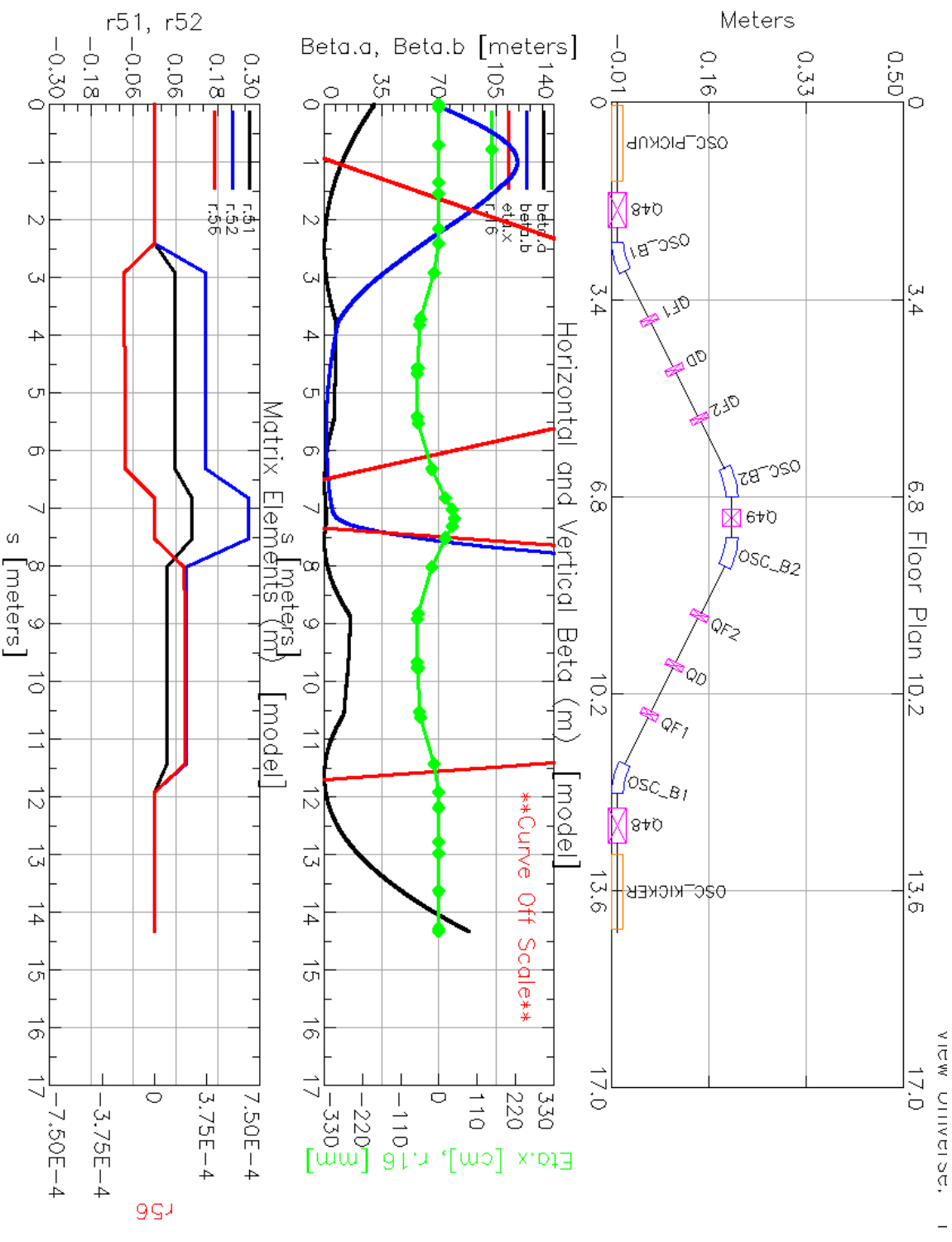
- Problem: K1s necessary to make bypass isochronout R51=R52=R56=0 at end, make beta functions unworkable.

- This is a "3-1-3" quad arrangement ... "2-3-2" gives similar results.

Try for symmetric Twiss

- Sharp defocusing at Qf1 compensated by large slope, another sharp defocusing at at Q49.

- $\alpha_{y,start}$ = -40

- Not enough phase advance to steer η and β independently.

Meters

Horizontal and Vertical Beta (m) [model]

Curve Off Scale

Matrix Elements (m) [model]

Beta.a, Beta.b [meters]

r51, r52

beta.a
beta.b
et.x
r.16

r.51
r.52
r.56

Eta.x [cm], r.16 [mm]

s [meters]

s [meters]

Floor Plan

OSC_PICKUP, 048, OSC_B1, QF1, QD, QF2, OSC_B2, 049, OSC_B2, QF2, QD, QF1, OSC_B1, 048, OSC_KICKER

"Collider Optics" solution

- Steep β functions required for matching

- β < 1 in middle