Bypass

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Cooling

$$\frac{\Delta p}{p} = \xi \sin(k\Delta s)$$

$$\Delta a_x^2 = -2(\Delta p/p) E_x \sin(\theta_{xk} + \theta_{xc})$$

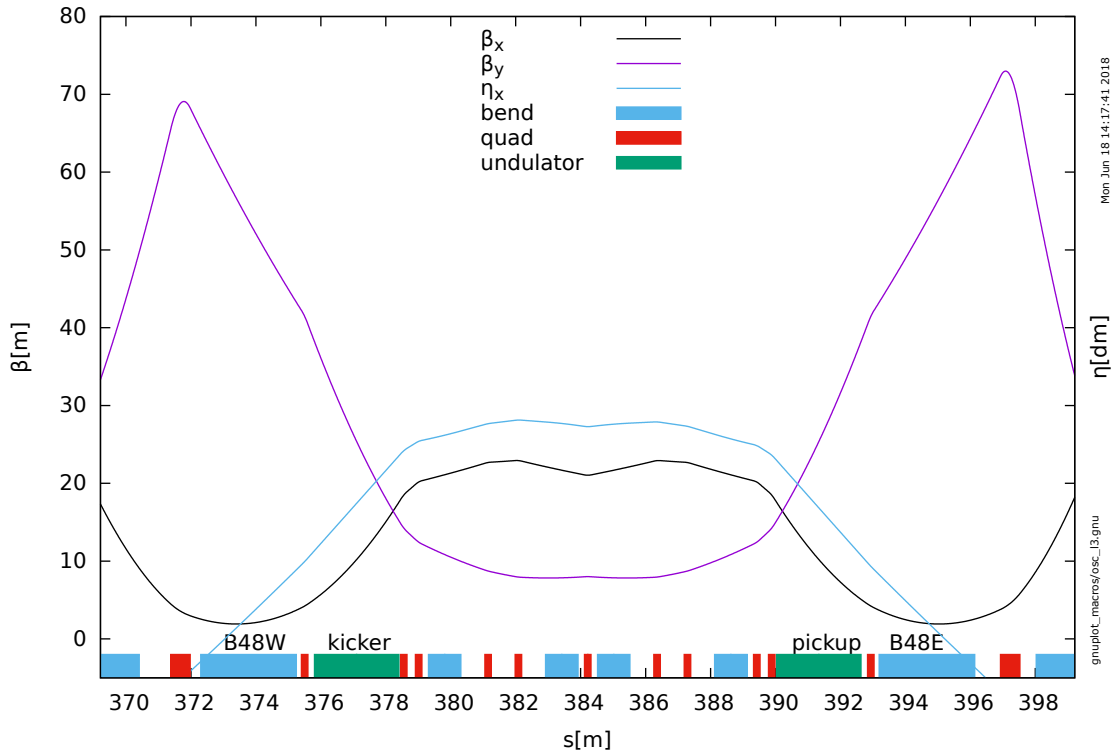
$$E_x = a_x(\eta^2\gamma + \beta(\eta')^2 + 2\alpha\eta'\eta)^{1/2}$$

Horizontal emittance

$$\mathcal{H} = (\eta^2\gamma + \beta(\eta')^2 + 2\alpha\eta'\eta)^{1/2}$$

$$I_5 = \oint \frac{\mathcal{H}}{|\rho^3|} ds \qquad I_2 = \oint \frac{1}{\rho^2} ds$$

$$\epsilon = C_q \gamma^2 \frac{I_5}{I_2}$$



Optical stochastic cooling insert parameters

Beam Energy = 1.0000E+09 gamma_e = 1.9570E+03

Wiggler: B_max = 1.4000E-01 T wiggler_period = 3.2500E-01 m K_param = 4.2479

Optical wavelength = 8.0810E-07

Pickup: beta/alpha/gamma = 9.8129E+00, 6.1811E-01, 1.4084E-01

kicker: eta/etap = 8.5232E-01 -2.7230E-01

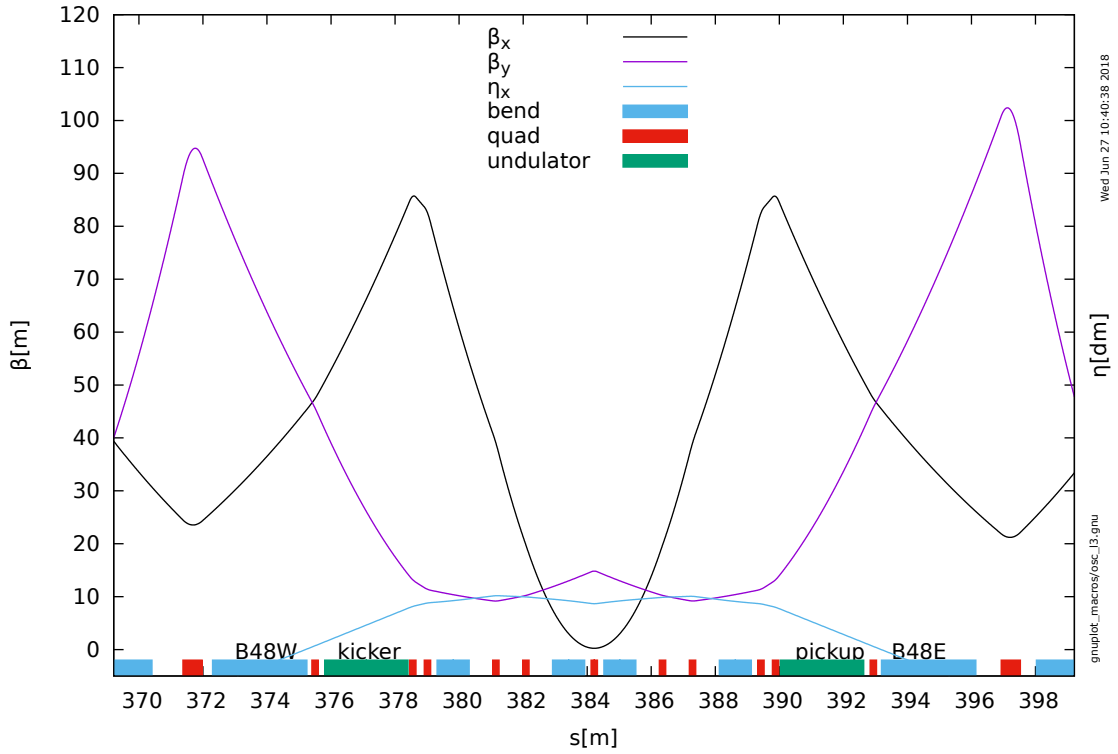
kicker: Curly H = 7.3688E-01

Horizontal emittance = 5.5136E-10 emit_max = 4.2810E-09 => n_x = 2.8

Fractional energy spread = 4.0658E-04 dp/p_max = 7.0781E-03 => n_z = 17.4

Ratio transverse/longitudinal rate = 3.3145E+01

M_{51} = 3.1722E-04 M_{52} = -1.3786E-02 M_{56} = 3.5886E-03 tilde_M_{56} 1.0510E-04



M_{51} = 1.546E-03 M_{52} = -1.607E-02 M_{56} = 3.314E-03 tilde_M_{56} = 1.053E-04
Delta s = 2.0451E-03
Beam Energy = 1.0000E+09 gamma_e = 1.9570E+03
Wiggler: B_max = 0.14 T wiggler_period = 0.325 m K_param = 4.248
Optical wavelength = 8.0810E-07
Pickup: beta/alpha/gamma = 6.6260E+01 6.4101E+00 6.3521E-01
kicker: eta/etap = 4.4745E-01/ -2.4280E-01
kicker: Curly H = 1.6249E+00
Horizontal emittance = 2.16 nm emit_max = 24.5 nm => n_x = 3.36
Fractional energy spread = 4.0659E-04 dp/p_max = 7.0674E-03 => n_z = 17.4
Ratio transverse/longitudinal rate = 3.0483E+01

584	OSC_Q49	-0.8757
591	OSC_QL2E	0.1344
593	OSC_QL1E	-0.4886
600	OSC_Q48EA	0.5214
611	OSC_Q0E	-0.1614