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In[1]:= << im_example_sol.m
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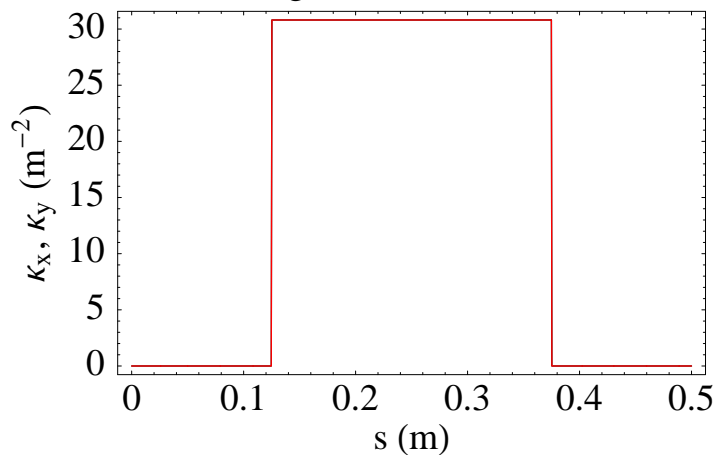
Matched Envelope Solution -- IM Method

5-23-2006 by lund on linac

Transport Lattice

Lattice Type	Solenoid
Undepressed Phase Advances [deg/period]	
x-plane, σ_{0x} [deg/period]	120.
y-plane, σ_{0y} [deg/period]	120.
Lattice Period, L_p [m]	0.5
Occupancy, η	0.5
Syncopation Factor, α ($\alpha = 1/2 \Rightarrow$ FODO)	NA
Max Focusing Strength, $\text{Max}[\kappa_x, \kappa_y]$, [$1/\text{m}^2$]	30.806

Lattice Focusing Functions (black = x, red = y)

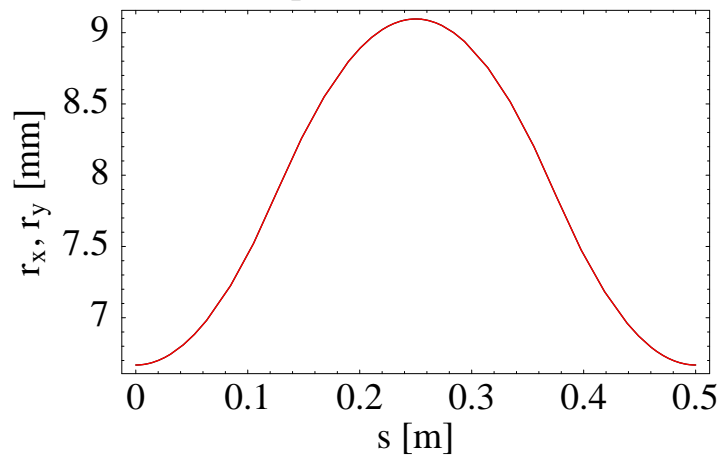


Beam Properties

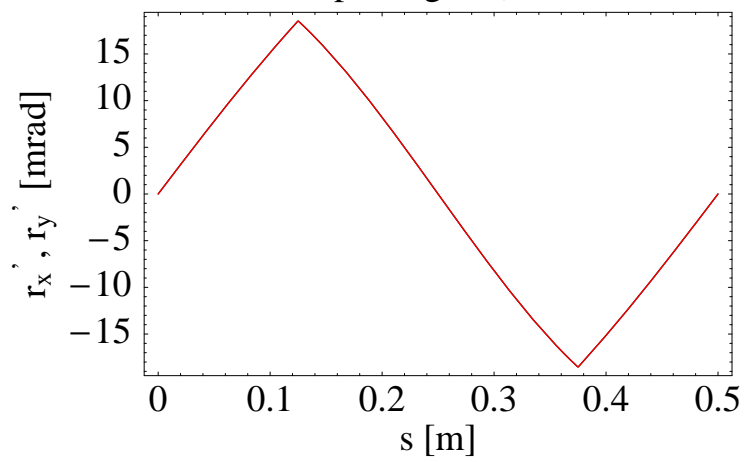
Dimensionless Perveance, Q	9.9587×10^{-4}
RMS Edge Emittances [m-rad]:	
ε_x	$5. \times 10^{-5}$
ε_y	$5. \times 10^{-5}$
Depressed Phase Advances [deg/period]	
x-plane, σ_x [deg/period]	24.
y-plane, σ_y [deg/period]	24.
Tune Depressions:	
σ_x / σ_{0x}	0.2
σ_y / σ_{0y}	0.2

Matched Solution

Matched Envelope Functions (black = x, red = y)



Matched Envelope Angles (black = x, red = y)



	x-Horizontal	y-Vertical
Radii, $r_x = 2 \langle x^2 \rangle^{1/2}$, $r_y = 2 \langle y^2 \rangle^{1/2}$:		
Avg (Lattice Period), $\overline{r_x}$, $\overline{r_y}$ [mm]	7.8732	7.8732
Max, Max[r_x], Max[r_y] [mm]	9.096	9.096
s-locations of Maxs [mm]	250.	250.
Min, Min[r_x], Min[r_y] [mm]	6.6684	6.6684
s-locations of Mins [mm]	0.	0.
Angles, r_x' , r_y' :		
Max, Max[r_x'], Max[r_y'] [mrad]	18.544	18.544
s-locations of Maxs [mm]	125.	125.
Min, Min[r_x'], Min[r_y'] [mrad]	-18.544	-18.544
s-locations of Mins [mm]	375.	375.
Matching Conditions:		
Radii, $r_x[0]$, $r_y[0]$ [mm]	6.6684	6.6684
Angles, $r_x'[0]$, $r_y'[0]$ [mrad]	-1.165×10^{-6}	-1.165×10^{-6}
Average Radius Measures:		
$\sqrt{\overline{r_x} \overline{r_y}}$ [mm]	7.9223	
$(\overline{r_x} + \overline{r_y}) / 2$ [mm]	7.8732	

Matched Solution -- Numerical Parameters

Parameterization Case	2
Specified Fractional Tolerance	$1. \times 10^{-6}$
Achieved Fractional Tolerance	1.7608×10^{-7}
Iterations Needed	6
CPU Time for Solution [sec]	1.38