



Cornell University
Laboratory for Elementary-Particle Physics



CESR Synchrotron Radiation Tables and Electron Cloud Modelling Input Parameters

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Cornell Laboratory for Accelerator-Based Sciences and Education

Electron Cloud Simulations Meeting

Wilson Lab

4 February 2009





Synchrotron Radiation Summary Tables for April, 2007 Measurements at 1.885 GeV

Lattice: bmad 12wig 20050626a

<i>Element</i>	<i>Length</i>	<i>Fraction</i>	<i><Beta X></i>	<i><Beta Y></i>	<i>Phot/m/e</i>	<i>Frac*Phot/m/e</i>
Dipole	474.6	61.8%	15.4	18.8	0.562	0.347
Drift	174.9	22.8%	19.6	18.8	0.248	0.057
Wiggler	24.6	3.2%	20.4	16.3	0.572	0.018
Quadrupole	65.4	8.5%	18.3	19.8	0.369	0.031
Sextupole	22.3	2.9%	18.8	19.8	0.377	0.011
Solenoid	5.2	0.7%	13.7	24.1	0.019	0.000
Octupole	1.5	0.2%	14.7	8.8	0.058	0.000

Positron Beam

Simulation inputs (GD 3Aug08)

Drift 29% 0.248 phot/m/e

Dipole 71% 0.56 phot/m/e

<i>Element</i>	<i>Length</i>	<i>Fraction</i>	<i><Beta X></i>	<i><Beta Y></i>	<i>Phot/m/e</i>	<i>Frac*Phot/m/e</i>
Dipole	474.6	61.8%	15.3	19.3	0.564	0.349
Drift	174.9	22.8%	19.4	19.3	0.244	0.056
Wiggler	24.6	3.2%	20.2	16.7	0.589	0.019
Quadrupole	65.4	8.5%	18.1	20.4	0.347	0.030
Sextupole	22.3	2.9%	18.8	20.5	0.385	0.011
Solenoid	5.2	0.7%	13.5	25.2	0.019	0.000
Octupole	1.5	0.2%	15.3	9.2	0.059	0.000

Electron Beam

Simulation inputs (MV 26Jan09)

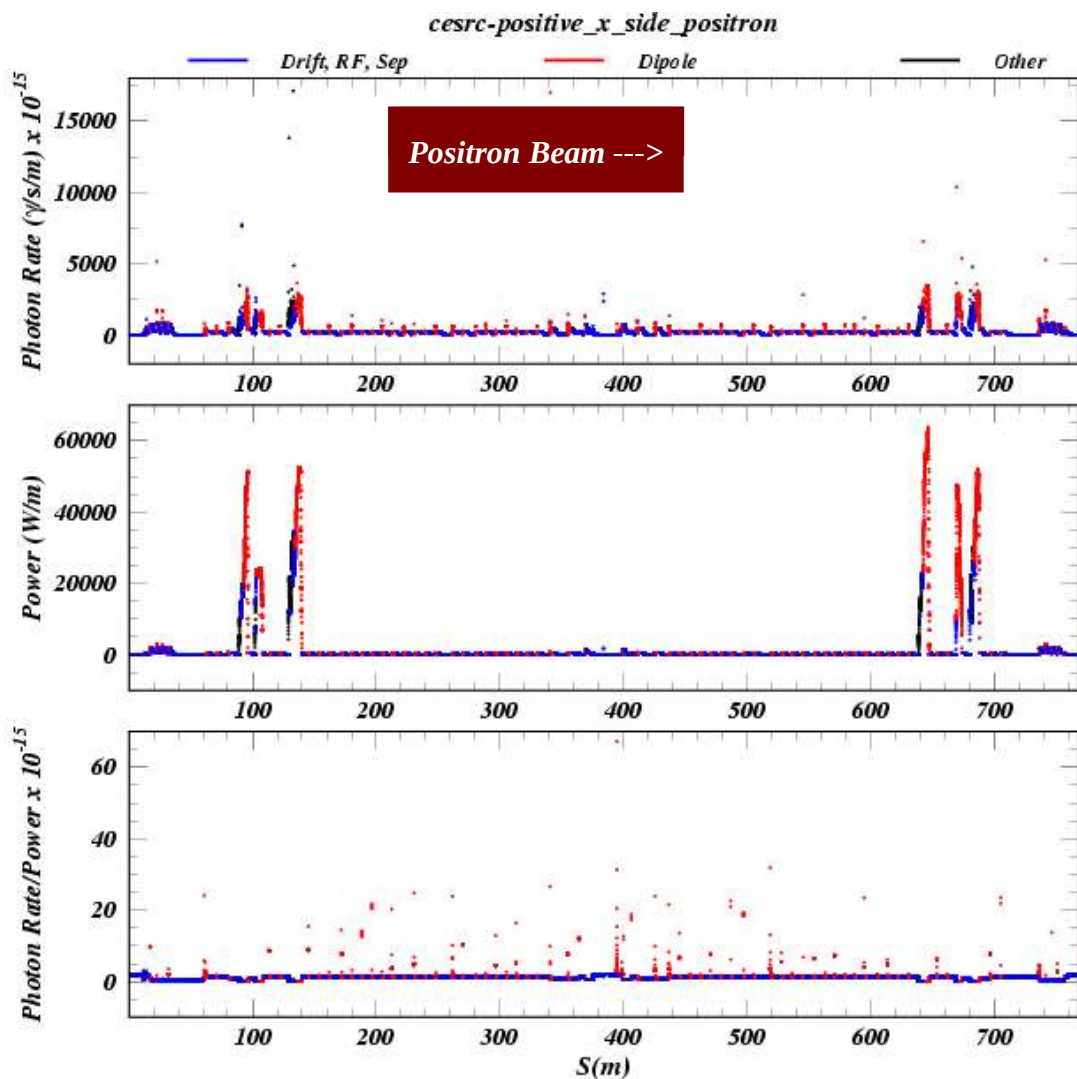
Drift 0.234 phot/m/e

Dipole 0.467 phot/m/e

Total length 768.4



Lattice: bmad 12wig 20050626a



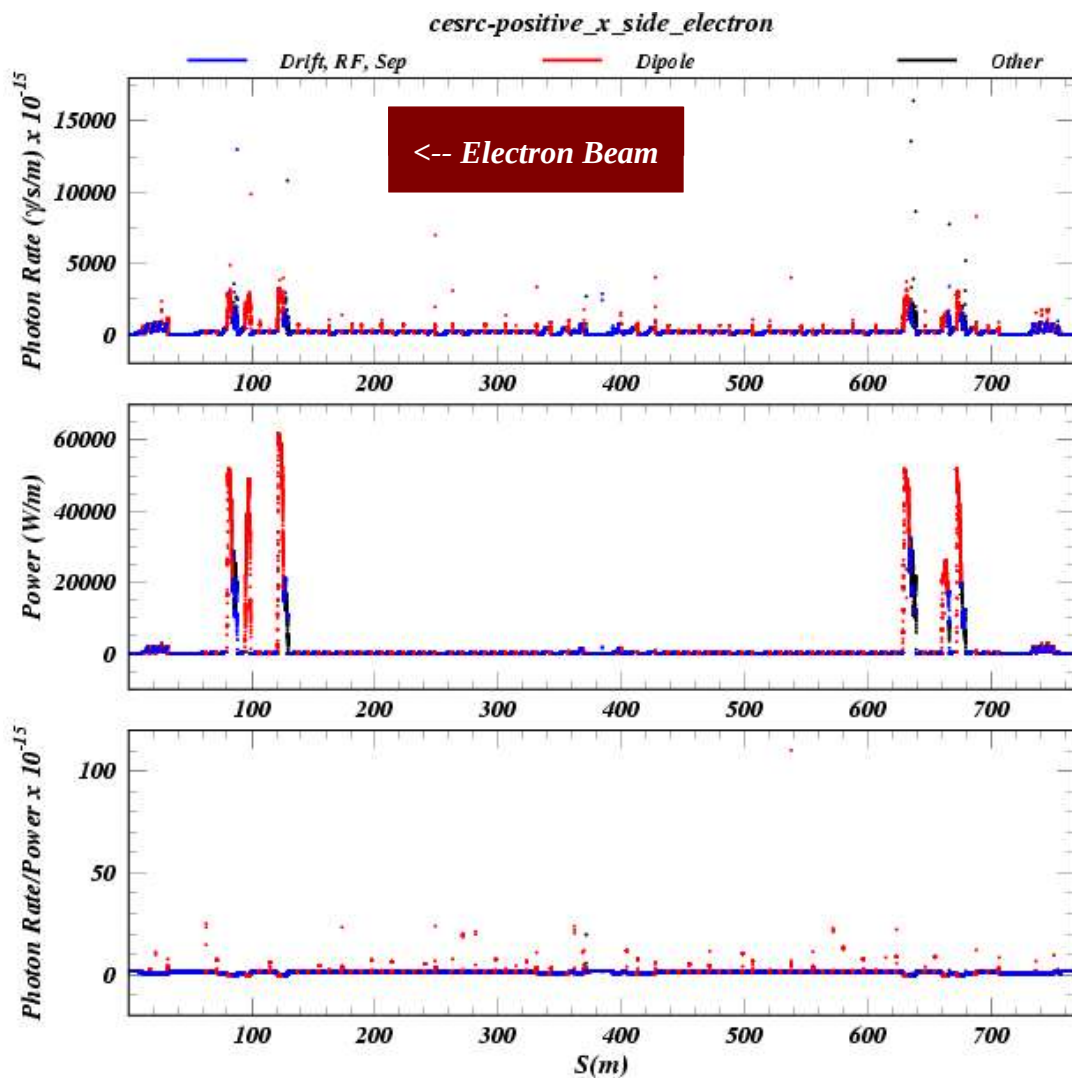
Photon Rate ($m^{-1} s^{-1}$)

Power ($W m^{-1}$)

Photon Rate/Power



Lattice: bmad 12wig 20050626a



Photon Rate ($m^{-1} s^{-1}$)

Power ($W m^{-1}$)

Photon Rate/Power