ILC International Linear Collider

Update on ILC ML Lattice Design

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for the FNAL LET group

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ILC International Linear Collider

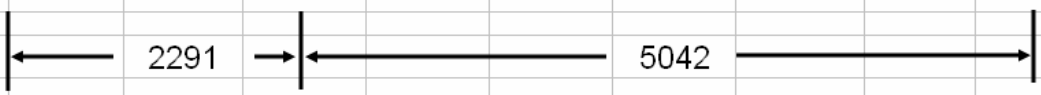
May 31 revision (v.3)

Main Linac

modules	without quad	with quad	without quad									
RF unit (lengths in meters)	11.271	12.543	11.271									
	three modules											
	RF unit	RF unit	RF unit	RF unit	end box							
string	35.085	35.085	35.085	35.085	2.500							
	twelve modules plus string end box											
	string	string	string	string	segmentation box							
vacuum segmentation unit	142.842	142.842	142.842	140.342	2.500							
	48 modules plus string end boxes plus segmentation box (segmentation box is the same as string end box and all contain vacuum breaks)											
	warm drift space	service box end	segment	segment	segment	segment	service box end	warm drift space	service box end	segment		
cryogenic unit	6.271	2.500	571.366	571.366	571.366	568.866	2.500	6.271	2.500	571.366	etc. . . .	
	(192 modules plus string end boxes plus segmentation boxes plus service boxes. One service box replaces a segmentation box.)											

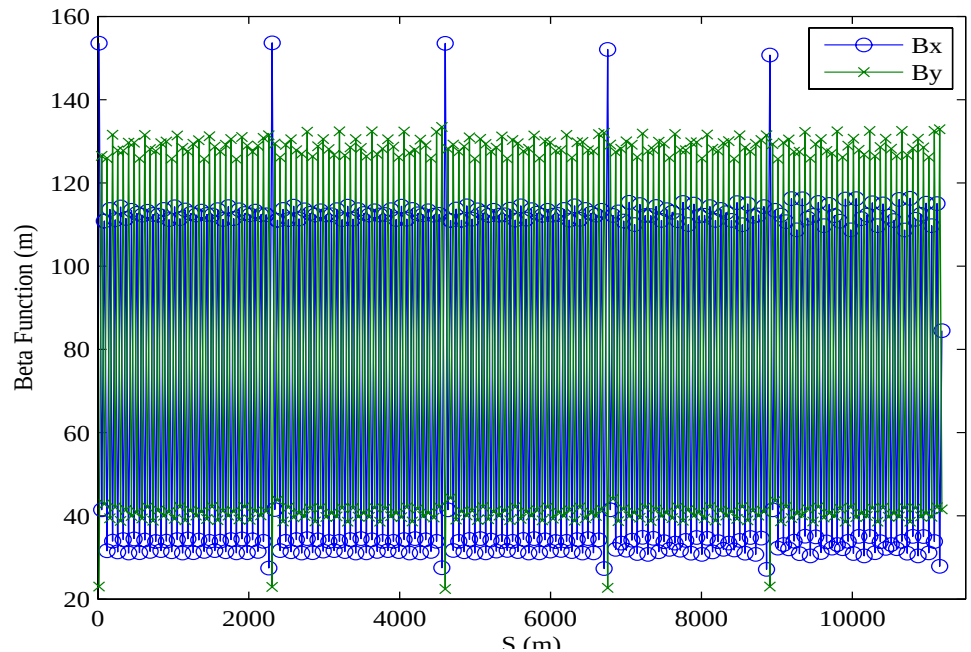
Note: seg'n box replaces end box hence last string shown shorter. Similarly, service box replaces last segmentation box below, so last segment is shown shorter.

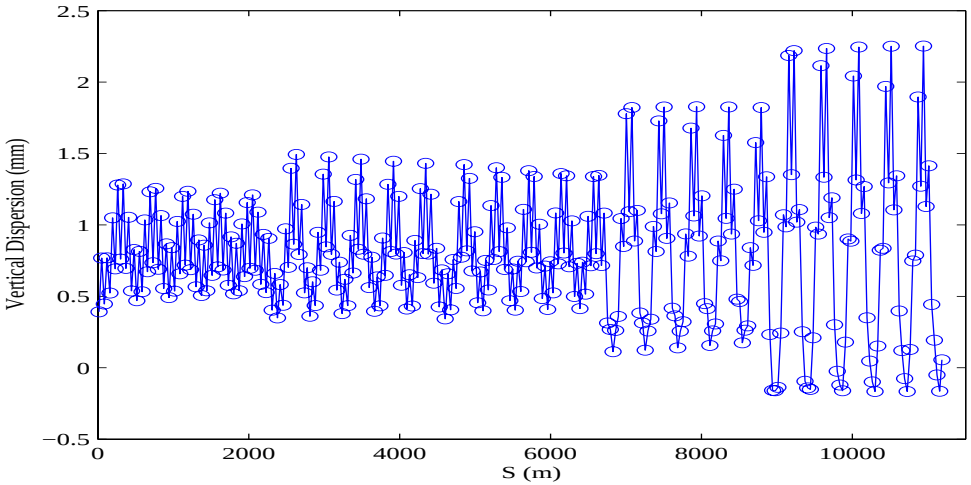
	long (16 strings)	warm	long (16 strings)	warm	short (15 strings)		short (15 string)	warm	long (16 string)	
RTML	cryogenic unit	drift space	cryogenic unit	drift space	cryogenic unit	undulator	cryogenic unit	rift spac	cryogenic unit	BDS
	2288.0	6.271	2288.0	6.271	2145.1	1200.0	2145.1	6.271	2288.0	



start of main linac — center of drift space — center of undulator

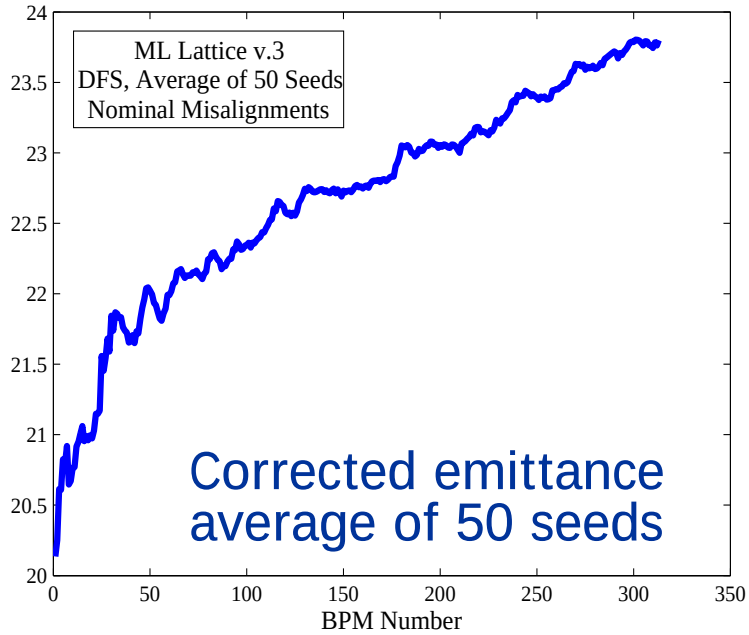
ML Lattice v.3 (Rev. May 31)





MatLiar: Curved Linac

DFS, nominal misalignment



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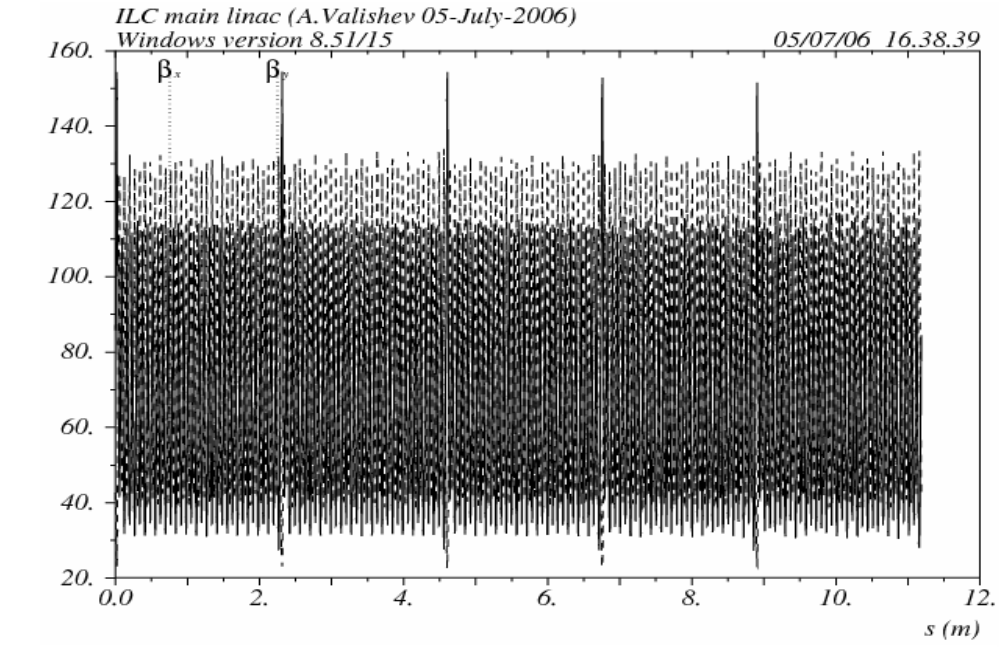
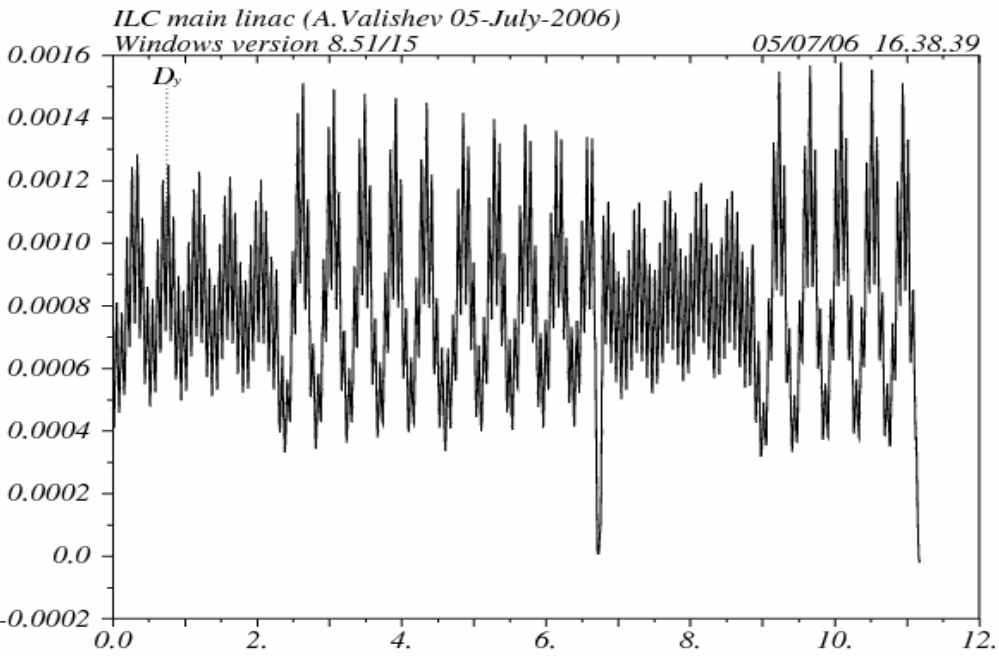
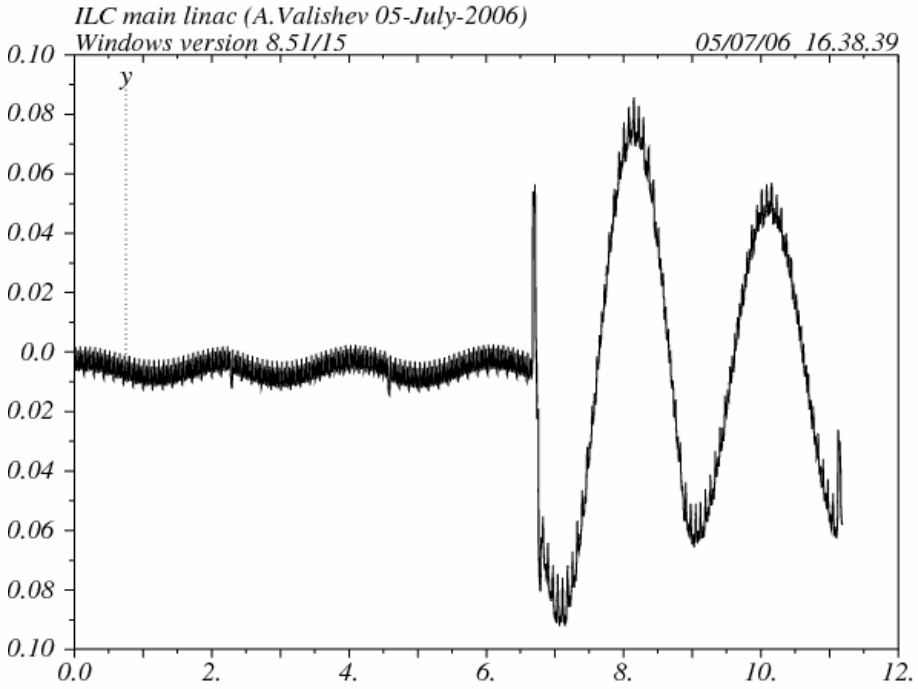
ML Lattice v.3 - MAD

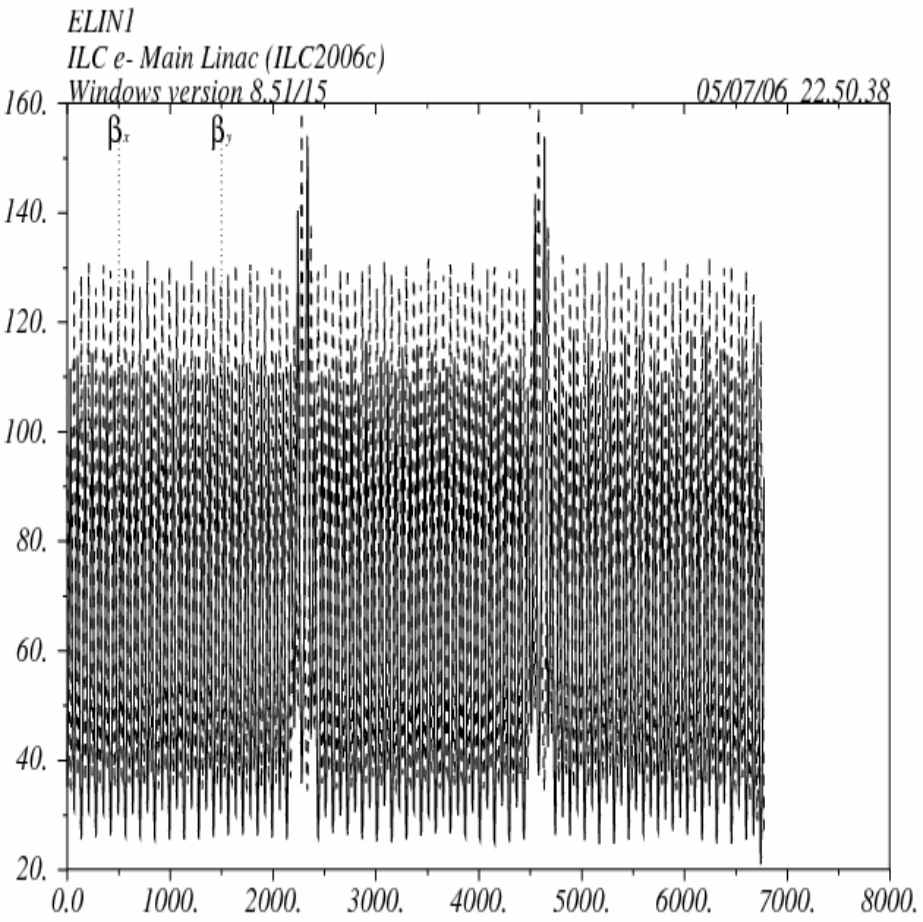




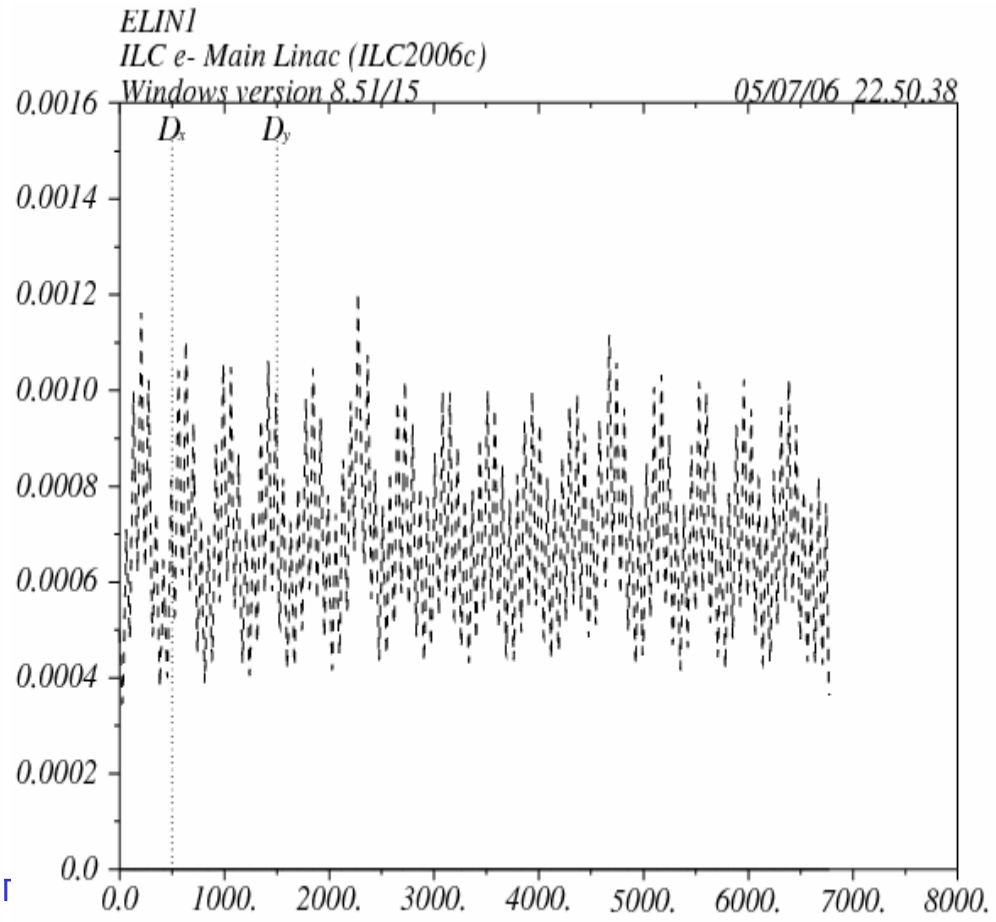


ML + Undulator + BDS in MAD: ML Part 1

β-functions

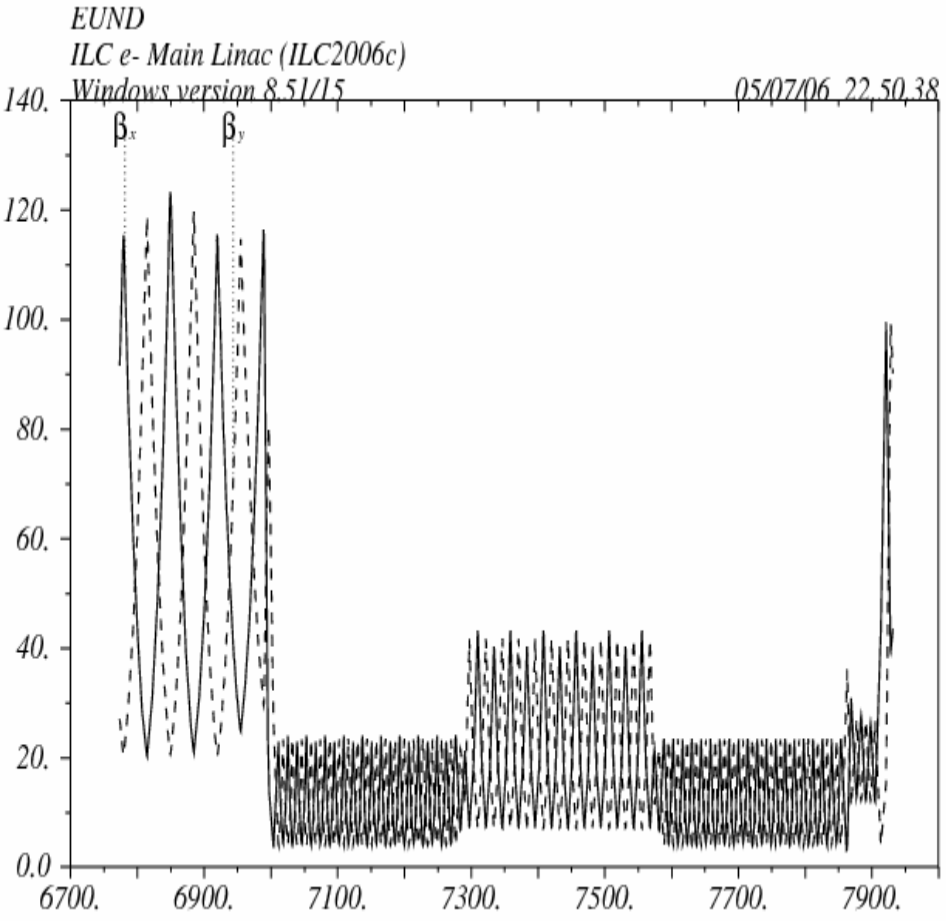


dispersion

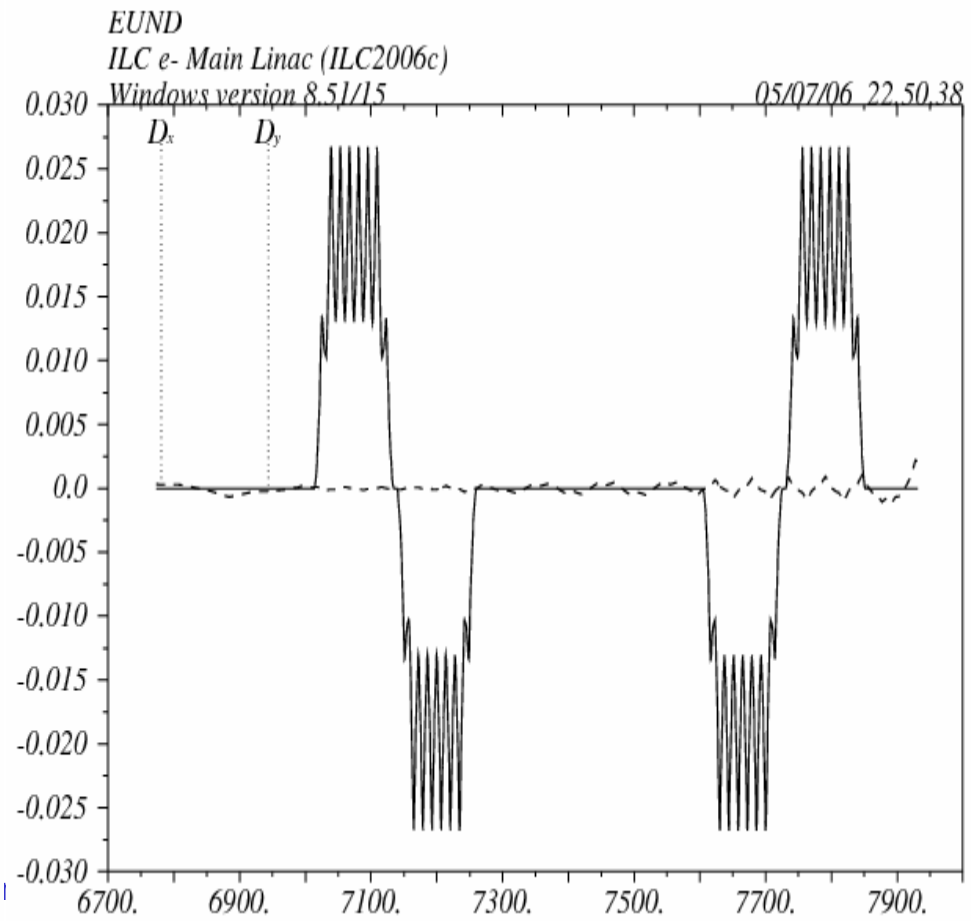


ML + Undulator + BDS in MAD: Undulator

β-functions

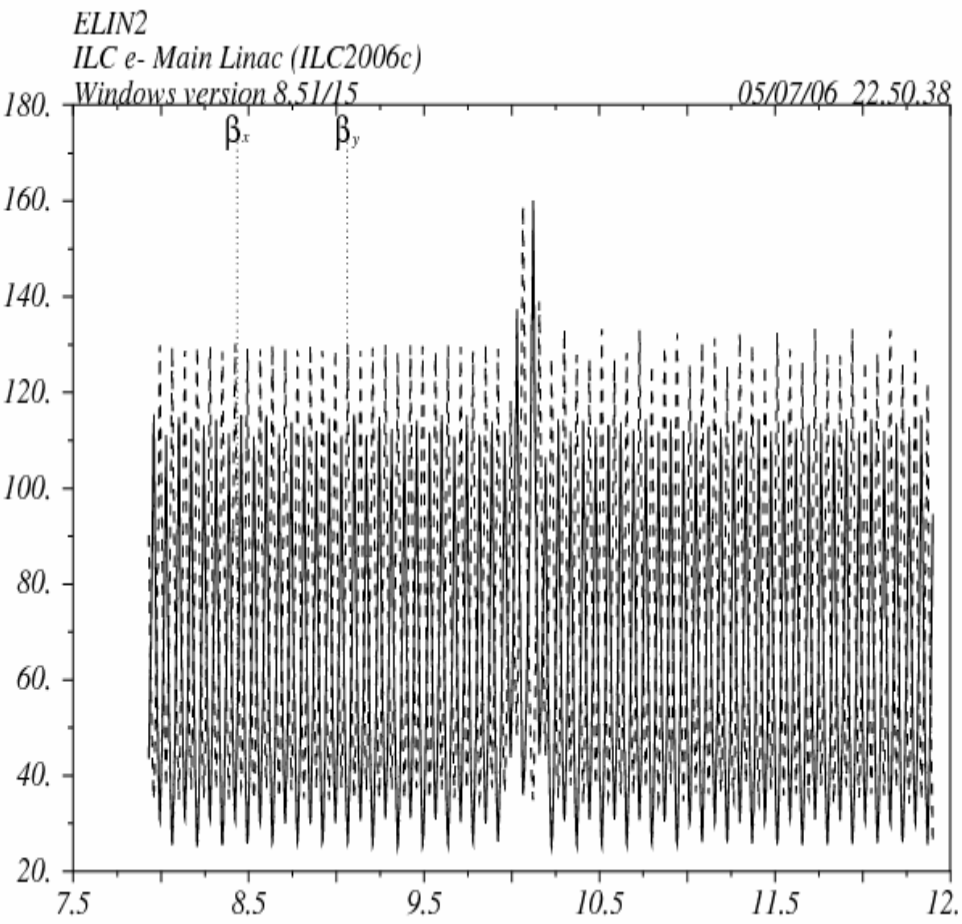


dispersion

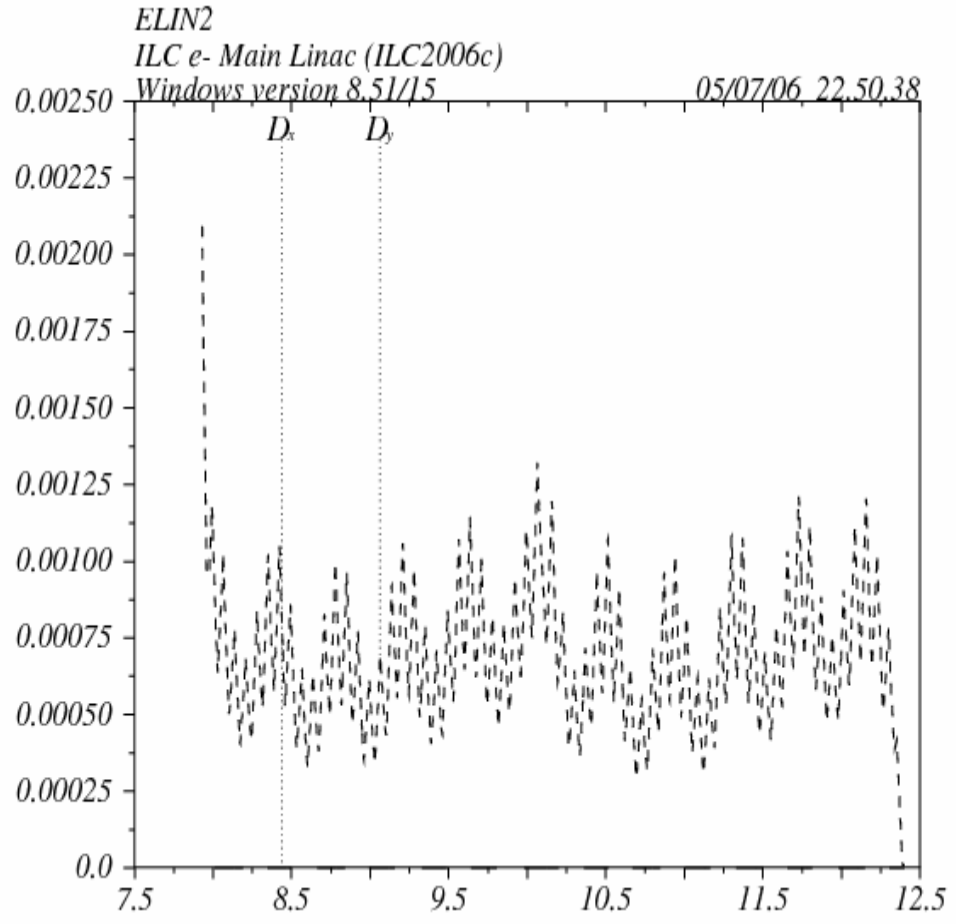


ML + Undulator + BDS in MAD: ML Part 2

β-functions

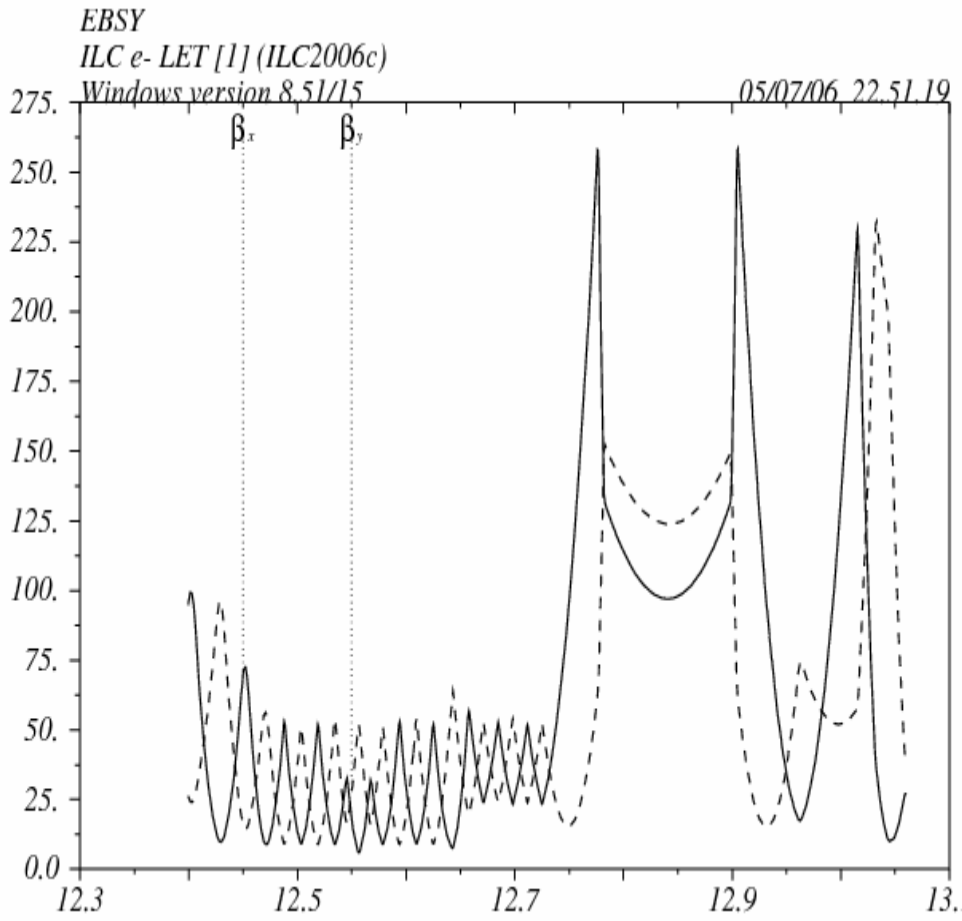


dispersion

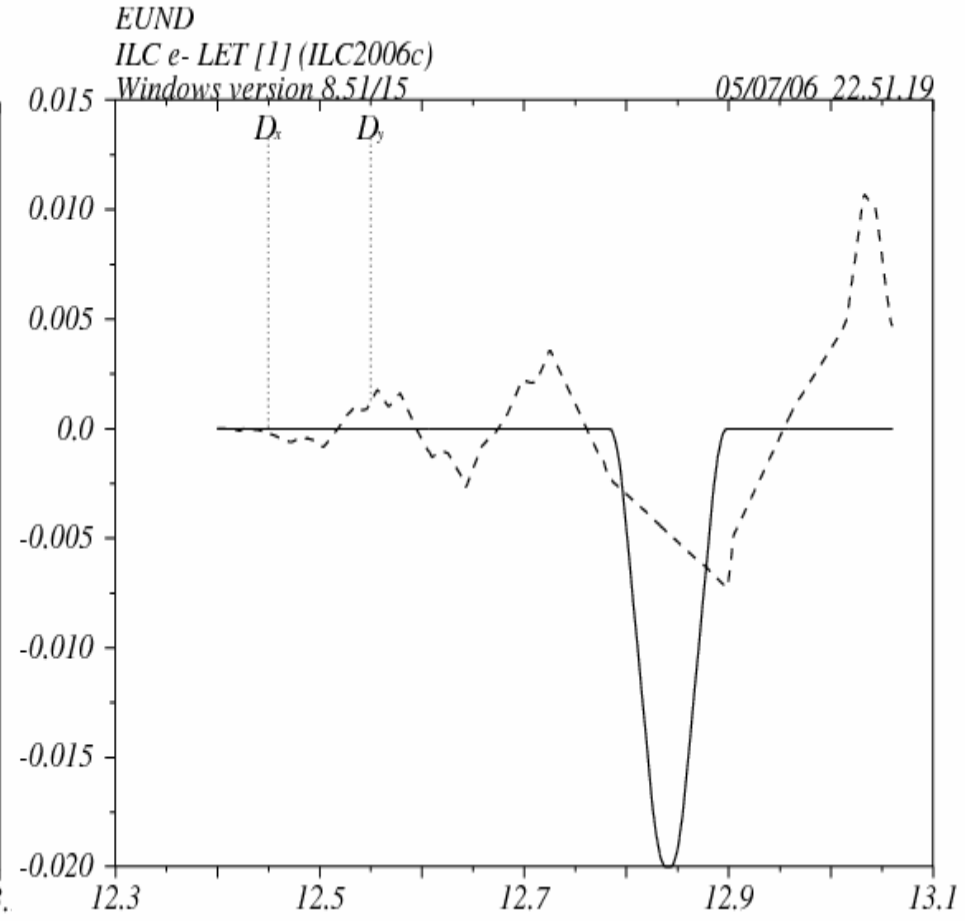


ML + Undulator + BDS in MAD: BDS

β-functions



dispersion



Summary

- ML Lattice (originally from Mark Woodley) modified according to the latest cryo configuration
- Earth curvature included
- Betas and dispersion matched
- Two versions – GKICK and MAD do not match, working on that