On DFS in the ILC ML Lattice

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October 17, 2006

Outlook

- Initially, curvature in the ML lattice has been implemented using two approaches

  - Correctors and GKICK element - MatLIAR
  - Correctors and general K0 multipole – MAD (M.Woodley)

- These formats are not compatible

- MAD implementation has issues with tilted trajectory in cavities

- A third version has been proposed which is usable in both codes – curvature is made by vertical SBEND elements

- XSIF deck and MAD file can be found at
  http://www.linearcollider.org/wiki/doku.php?id=rdr:rdr_as:main_linac_home
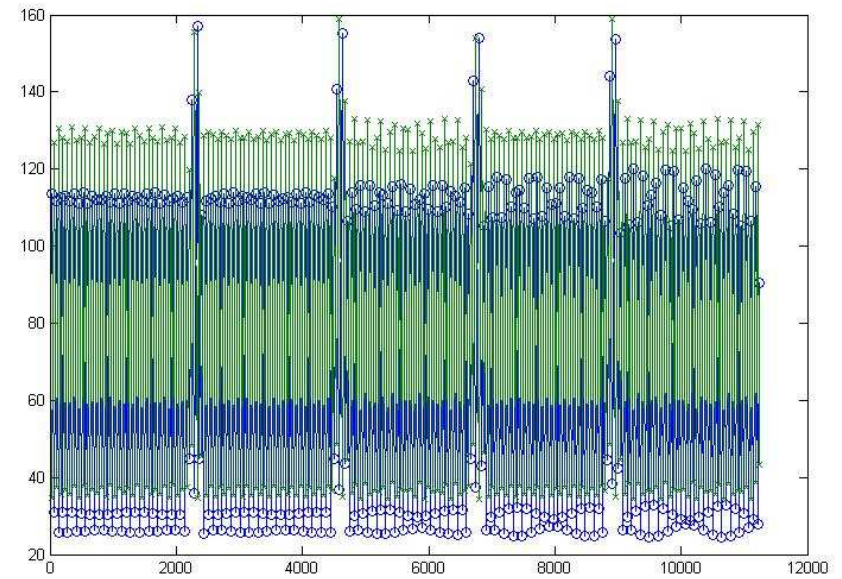
Beta-functions (MAD and MatLIAR)

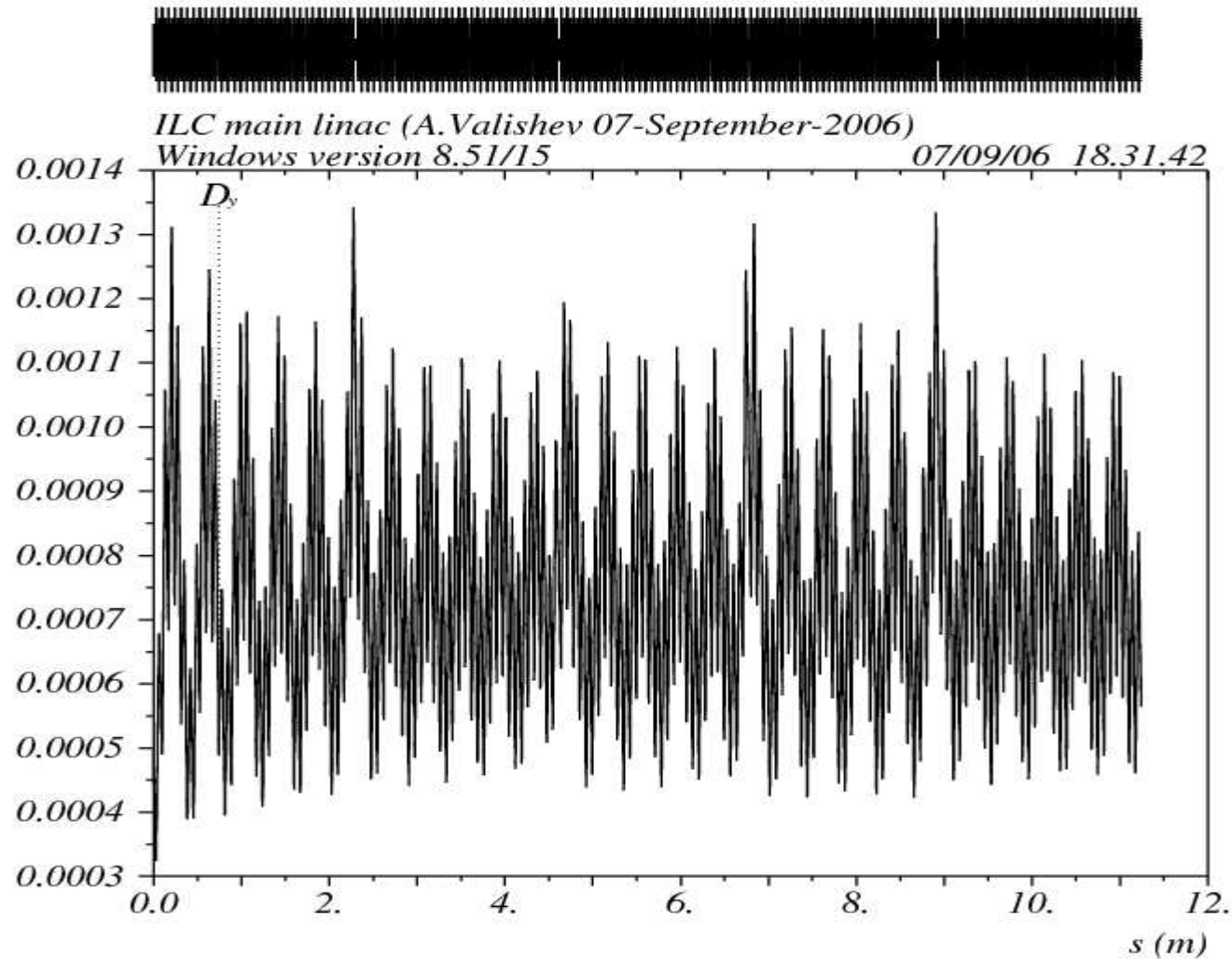ILC main linac (A.Valishev 07-September-2006)
Windows version 8.51/15   07/09/06 18.31.42

β_x β_y
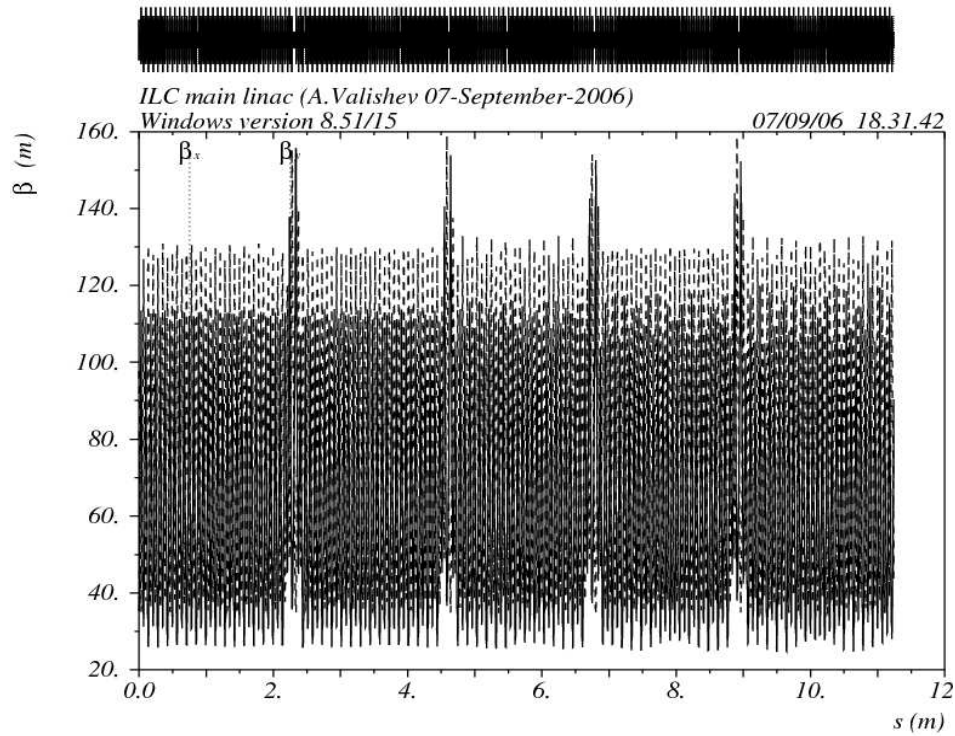
$\delta_E / p_0 c = 0.$

Table name = TWISS

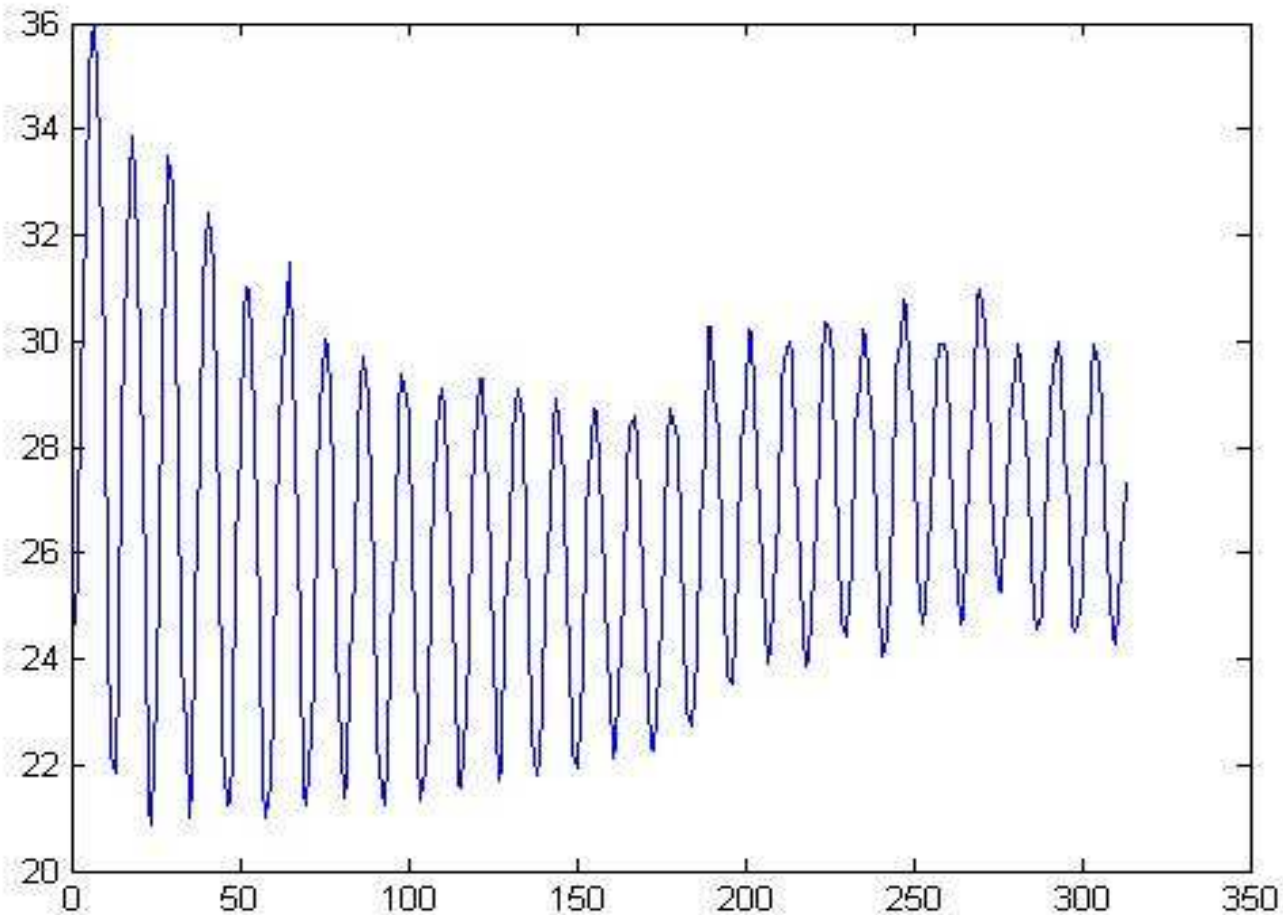$[*10**(3)]$

Vertical Dispersion (MAD)

Vertical Dispersion (MatLIAR)
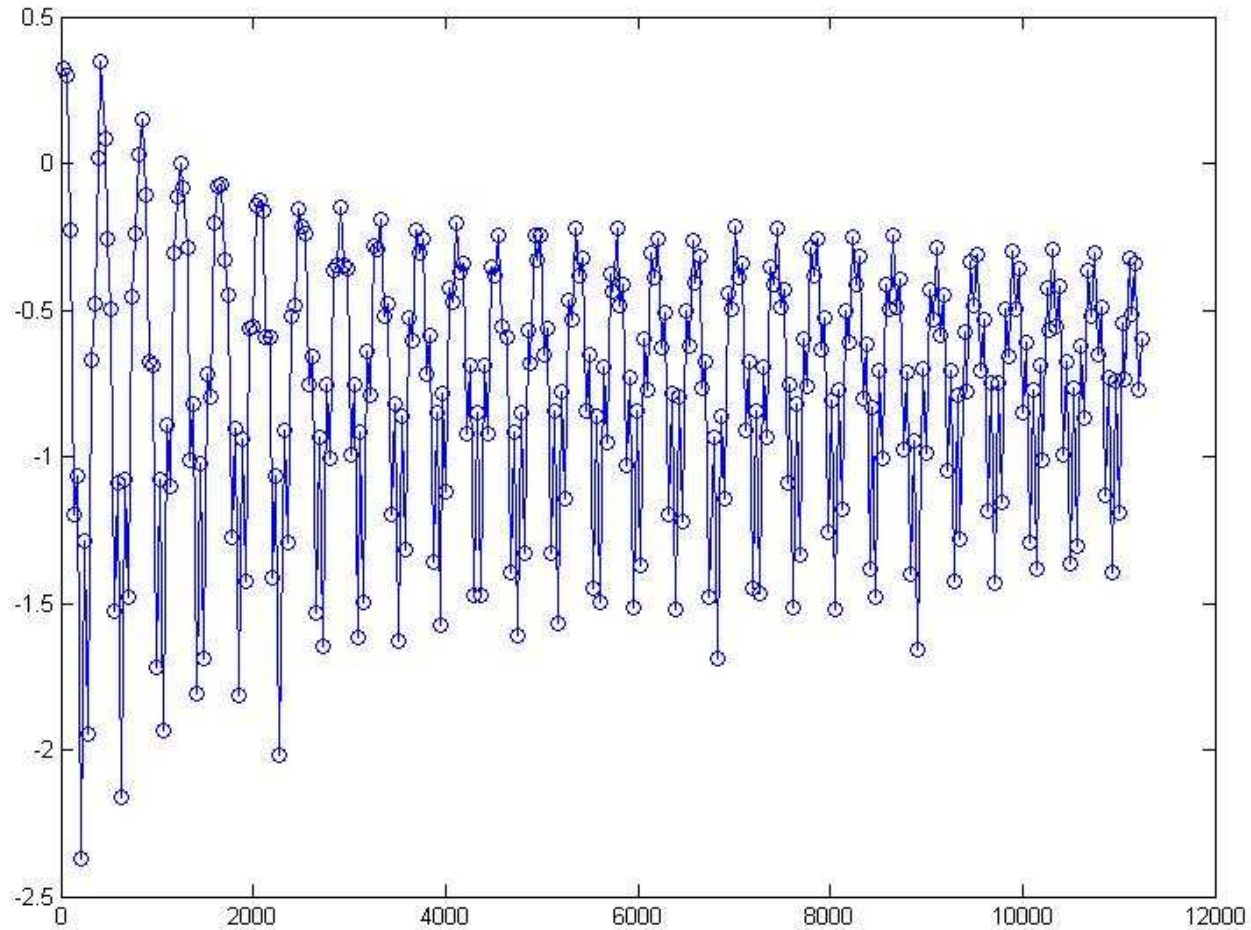
Dispersion calculation in LIAR is incorrect (sign problem in SBEND)
Fix is being worked out

Vertical Projected Emittance after DFS

This is dispersion uncorrected emittance.
Hence, real mode emittance is less than the minima.