

# Progress on the ILC-BDS (250GeV CoM)

15/08/12

# v.450LD0\_205D1B –new optics

- Used QDO, Qf1, QD2A, Qf3, QD6, Qf5, QD4, QD2B + matching quads to rematch to new Twiss
- Used QDO, Qf1, QD2A, Qf3, QD6, Qf5, QD4, QD2B + sextupoles

$$\beta_x = 0.01300000001 ;$$

$$\beta_y = 0.000410000219;$$

$$\alpha_x = O(e-010); \alpha_y = O(e-9)$$

$$D_x = O(e-6); 0$$

Corresponding  
beam sizes:

$$\sigma_x^1 = 7.29e-07$$

$$\sigma_y^1 = 7.66e-09$$

$$\sigma_x^2 = 7.41e-07$$

$$\sigma_y^2 = 7.78e-09$$

$$\sigma_x^3 = 7.521e-07$$

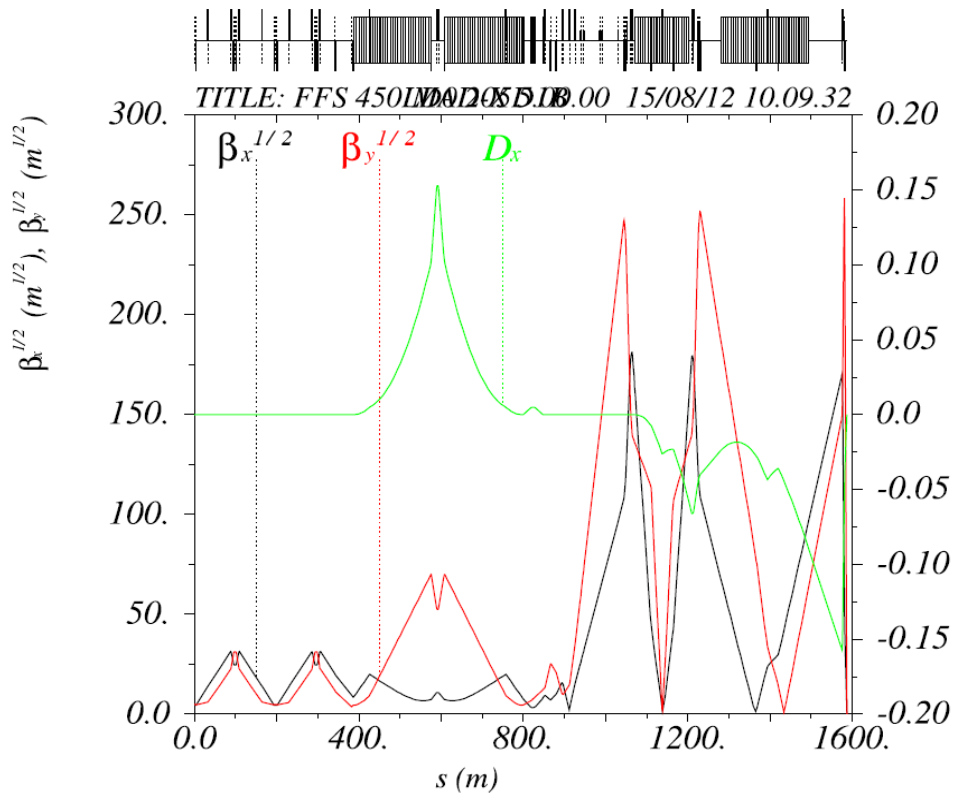
$$\sigma_y^3 = 8.01e-09$$

$$\sigma_x^4 = 7.67e-07$$

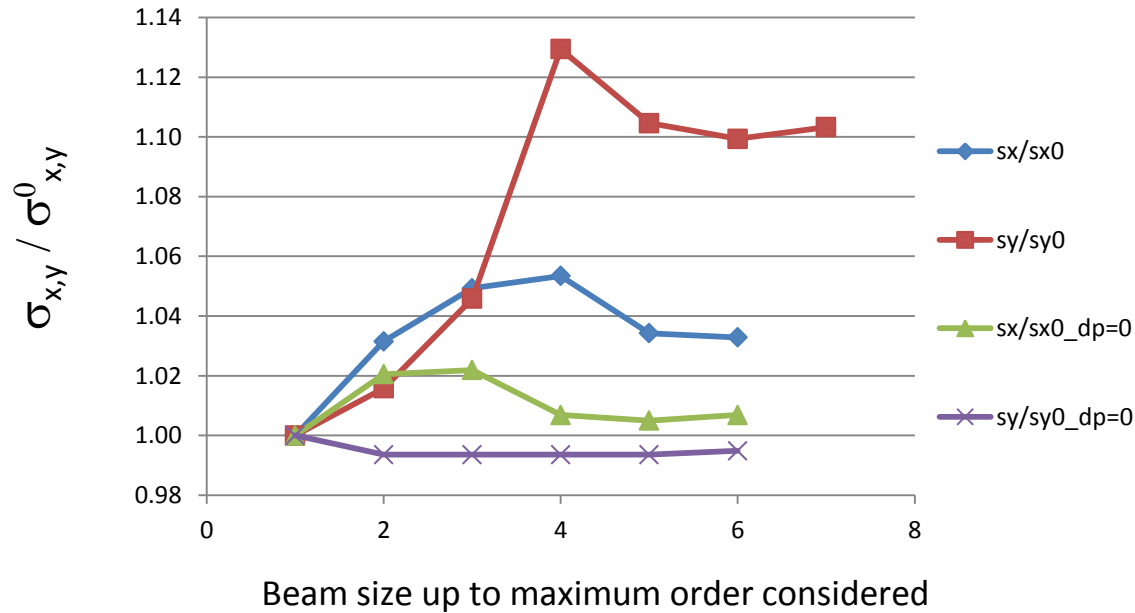
$$\sigma_y^4 = 8.72e-09$$

$$\sigma_x^5 = 7.54e-07$$

$$\sigma_y^5 = 8.52e-09$$



# v.450LD0\_2055D1B-new optics



Corresponding beam sizes:

$$\sigma_x^1 = 7.29e-07$$

$$\sigma_y^1 = 7.66e-09$$

$$\sigma_x^2 = 7.41e-07$$

$$\sigma_y^2 = 7.78e-09$$

$$\sigma_x^3 = 7.521e-07$$

$$\sigma_y^3 = 8.01e-09$$

$$\sigma_x^4 = 7.67e-07$$

$$\sigma_y^4 = 8.72e-09$$

$$\sigma_x^5 = 7.54e-07$$

$$\sigma_y^5 = 8.52e-09$$

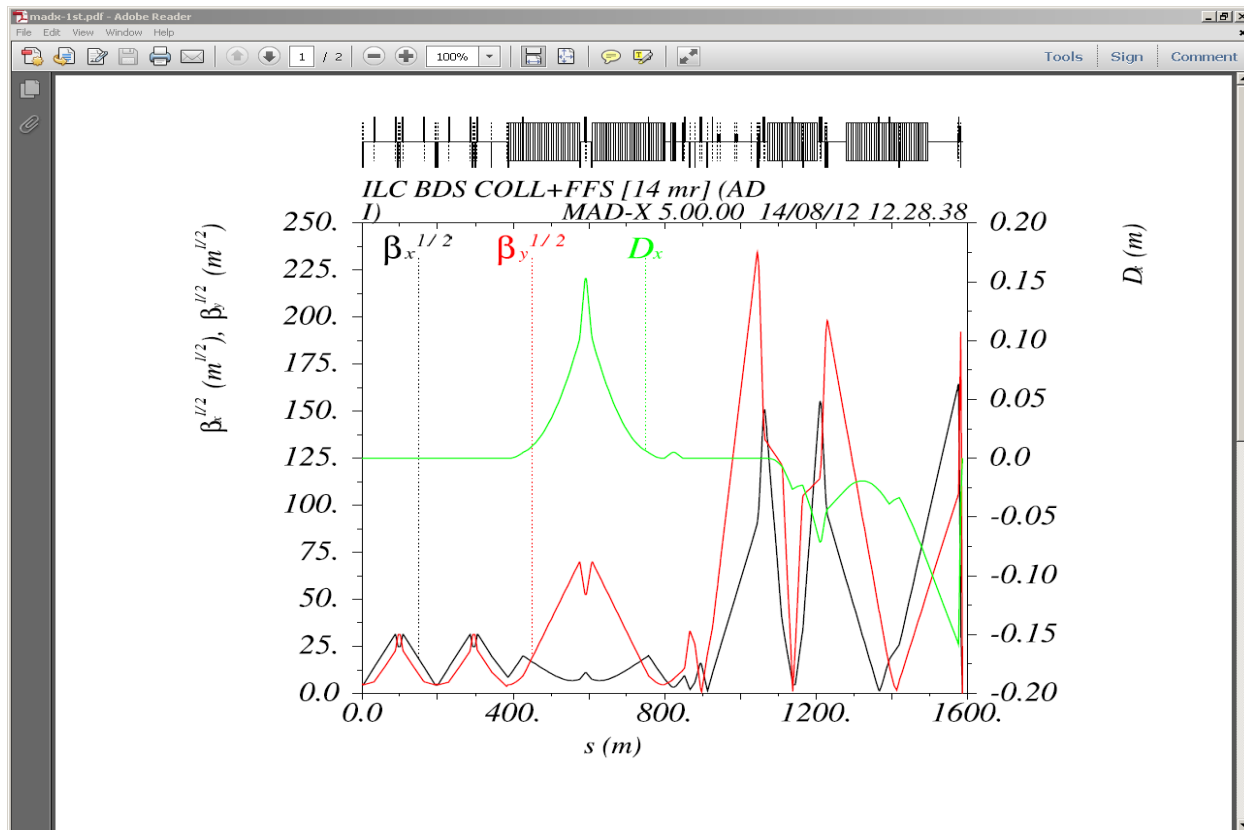
# v.351LD0\_135D1B (Half-quads)

- Used QD0, Qf1, QD2A, Qf3, QD6, Qf5, QD4, QD2B + QF7, QD8, QD10, QF9+matching quads

$$\beta_x = 0.013;$$

$$\beta_y = 0.0004100; \alpha_x = 4e-05;$$

$$\alpha_y = -1.5e-09; D_x = 0(e-5);$$



Corresponding  
beam sizes:

$$\sigma_x^1 = 7.30e-07$$

$$\sigma_y^1 = 7.69e-09$$

$$\sigma_x^2 = 7.67e-07$$

$$\sigma_y^2 = 7.78e-09$$

$$\sigma_x^3 = 7.86e-07$$

$$\sigma_y^3 = 7.88e-09$$

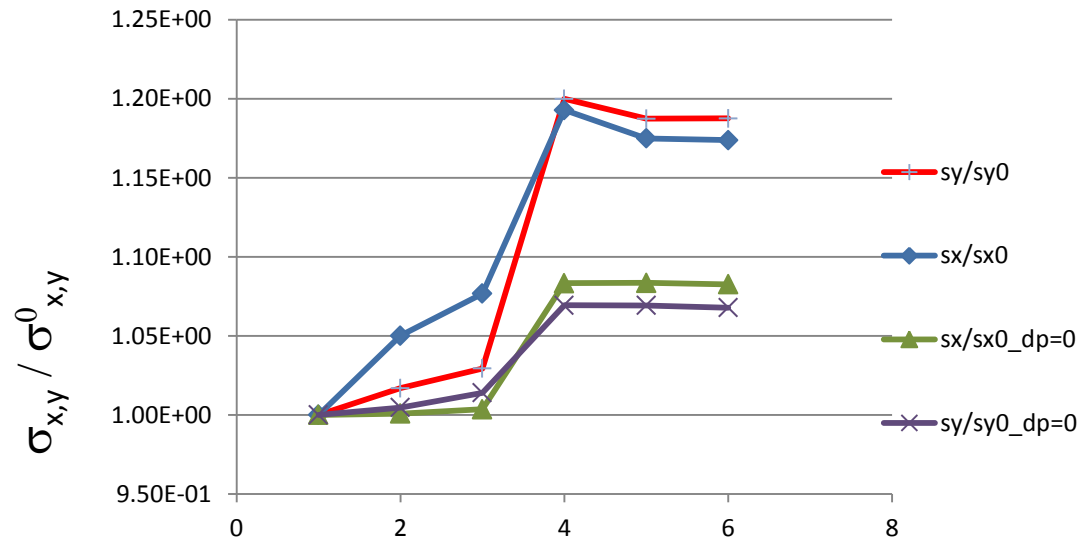
$$\sigma_x^4 = 8.74e-07$$

$$\sigma_y^4 = 9.19e-09$$

$$\sigma_x^5 = 8.58e-07$$

$$\sigma_y^5 = 9.09e-09$$

# v.351LD0\_135D1B-new optics ( Half Quads)



Beam size up to maximum order considered

*Corresponding beam sizes:*

$$\sigma_x^1 = 7.30e-07$$

$$\sigma_y^1 = 7.69e-09$$

$$\sigma_x^2 = 7.67e-07$$

$$\sigma_y^2 = 7.78e-09$$

$$\sigma_x^3 = 7.86e-07$$

$$\sigma_y^3 = 7.88e-09$$

$$\sigma_x^4 = 8.74e-07$$

$$\sigma_y^4 = 9.19e-09$$

$$\sigma_x^5 = 8.58e-07$$

$$\sigma_y^5 = 9.09e-09$$

# Plans

- Finish 250 GeV CoM lattice  
v.351LD0\_304D1B with half quads at FF
- Repeat the same exercise for 450D0\_205D1B