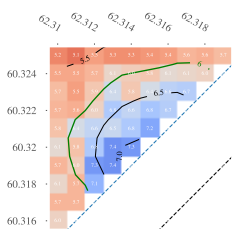


# HL-LHC v1.5. Flat optics. End of levelling.

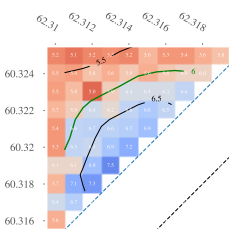
$N_b = 1.4 \times 10^{11}$  ppb,  $\beta_{y,IP1}^* = 7.5$  cm,  $\beta_{x,IP1}^* = 18$  cm,  $\Phi/2_{IP1(H)/5(V)} = 250$   $\mu$ rad

CC ON,  $\sigma_z = 7.61$  cm,  $\Phi/2_{IP8,V} = 170$   $\mu$ rad,  $\varepsilon_n = 2.5$   $\mu$ m,  $Q' = 5$ ,  $I_{MO} = 60$  A,  $C^- = 10^{-3}$

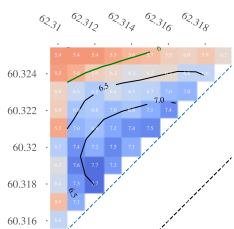
Bunch 76



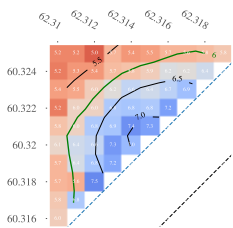
Bunch 2754



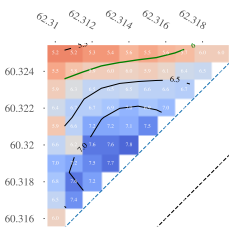
Bunch 1731



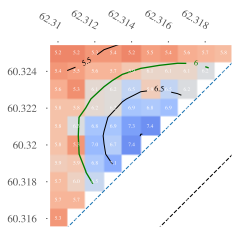
Bunch 2682



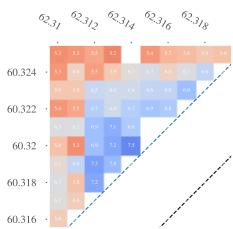
Bunch 607



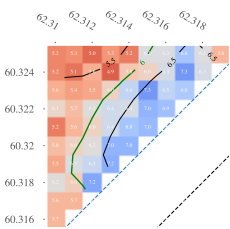
Bunch 77



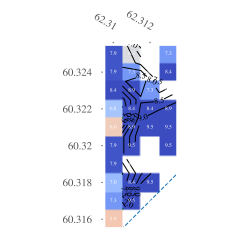
Bunch 3342



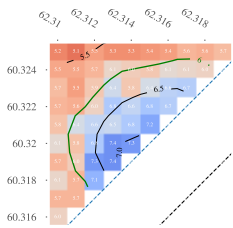
Bunch 2053



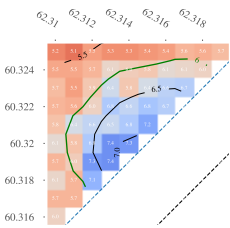
Bunch 2803



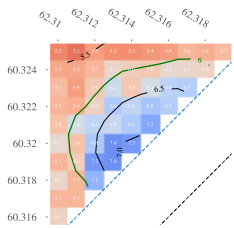
Bunch 74



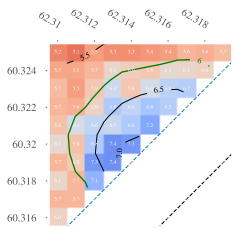
Bunch 1403



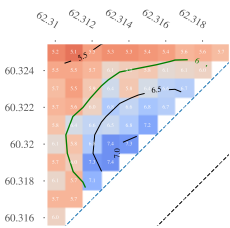
Bunch 2049



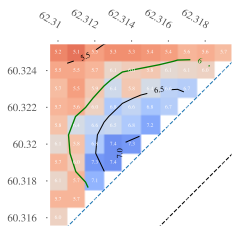
Bunch 139



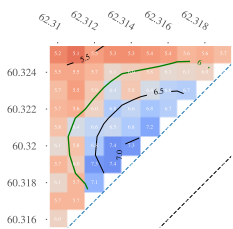
Bunch 848



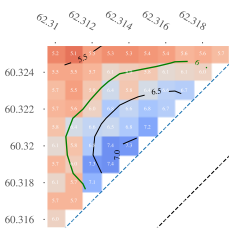
Bunch 1912



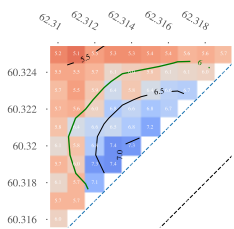
Bunch 398



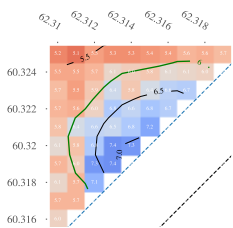
Bunch 2633



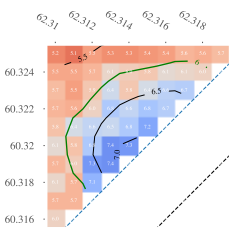
Bunch 2300



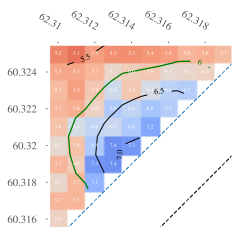
Bunch 2854



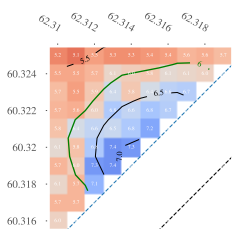
Bunch 126



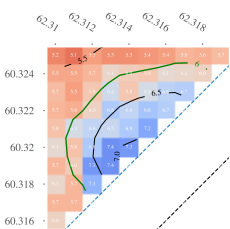
Bunch 897



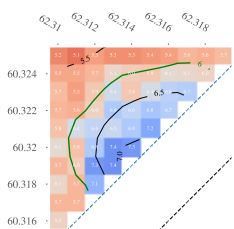
Bunch 222



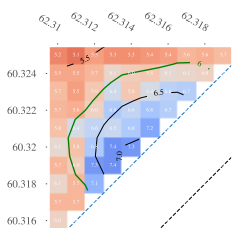
Bunch 1043



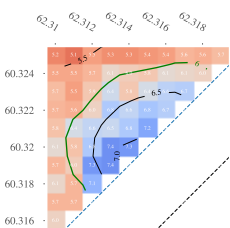
Bunch 154



Bunch 3435



Bunch 942



Bunch 1036

