HL-LHC v1.5. Flat optics. Start of levelling. CC ON. Bunch 1963. $N_b \simeq 2.3 \times 10^{11} \text{ppb}, \ \beta_{v, \text{IP1}}^* = 0.5 \text{ m}, \ \beta_{x, \text{IP1}}^* = 1 \text{ m}, \ \Phi/2_{\text{IP1(H)/5(V)}} = 250 \mu \text{rad}$ $\sigma_z = 7.61 \text{ cm}, \Phi/2_{\text{IP8, V}} = 170 \text{ }\mu\text{rad}, \ \varepsilon_n = 2.5 \text{ }\mu\text{m}, \ Q' = 5.0, \ I_{MO} = 410.0 \text{ A}, \ C^- = 0.001$ F. Scheme: 8b4e_1972b_1960_1178_1886_224bpi_12inj 65.302 65.302 65.311 65.312 65.312 65.310 65.351 65.35 60.329 -60.327 -8.0 60.325 -- 7.5 60.323 -- 7.0 60.321 -- 6.0 60.319 -- 5.5 60.317 -60.315 -- 4.5 - 4.0 60.313 -60.311 -

Horizontal tune Q_x

Vertical tune Qy

60.309 -