HL-LHC v1.6. E = 7.0 TeV. CC = 0.0  $\mu$ rad. N<sub>b</sub>  $\simeq 2.2 \times 10^{11}$  ppb,  $L_{1/5} = 2.44 \times 10^{34} \text{cm}^{-2} \text{s}^{-1}, L_2 = 6.71 \times 10^{30} \text{cm}^{-2} \text{s}^{-1}, L_8 = 1.97 \times 10^{33} \text{cm}^{-2} \text{s}^{-1}$  $PU_{1/5} = 64.2$ ,  $\beta_{v,1}^* = 0.9$  m,  $\beta_{v,1}^* = 1.8$  m, polarity  $IP_{2/8} = 1/1$  $\Phi/2_{1(H)} = 250$  μrad,  $\Phi/2_{5(V)} = 250$  μrad,  $\Phi/2_{2.V} = -170$  μrad,  $\Phi/2_{8.V} = 170$  μrad  $\sigma_z = 7.61 \text{ cm}, \ \varepsilon_n = 2.3 \ \mu\text{m}, \ Q' = 15, \ I_{MO} = 300 \ A, \ C^- = 0.001$ 25ns\_2760b\_2748\_2492\_2574\_288bpi\_13inj\_800ns\_bs200ns.json. Bunch 150. 65.302 65.302 65.311 65.312 65.312 65.310 65.351 65.352 65.352 60.329 -8.0 60.323 - <4.0 <4.0 <4.0 4.0 4.1 4.3 4.5 4.3 4.5 4.8 60.321 - 43 ≤4.0 4.1 4.2 - 5.0  $60.315 - \le 4.0 \le 4.0 \le 4.0 = 4.0 = 4.2$ - 4.5  $60.313 - \le 4.0 \le 4.0 \le 4.0 \le 40$ 60.311 - <4.0 <4.0 60.309 -Horizontal tune Q<sub>x</sub>

/ertical tune Q<sub>v</sub>