HL-LHC v1.6. E = 7.0 TeV. CC = 0.0  $\mu$ rad. N<sub>b</sub>  $\simeq 2.2 \times 10^{11}$  ppb,  $L_{1/5} = 2.52 \times 10^{34} \text{cm}^{-2} \text{s}^{-1}, L_2 = 6.87 \times 10^{30} \text{cm}^{-2} \text{s}^{-1}, L_8 = 1.97 \times 10^{33} \text{cm}^{-2} \text{s}^{-1}$  $\beta_{x,1}^* = 1.1 \text{ m}, \beta_{x,1}^* = 1.1 \text{ m}, \text{ polarity IP}_{2/8} = 1/1$  $\Phi/2_{1(H)} = 250 \,\mu\text{rad}, \,\Phi/2_{5(V)} = 250 \,\mu\text{rad}, \,\Phi/2_{2,V} = -170 \,\mu\text{rad}, \,\Phi/2_{8,V} = 170 \,\mu\text{rad}$  $\sigma_z = 7.61 \text{ cm}, \ \varepsilon_n = 2.3 \ \mu\text{m}, \ Q' = 15, \ I_{MO} = -300.0 \ A, \ C^- = 0.001$ 25ns\_2760b\_2748\_2492\_2574\_288bpi\_13inj\_800ns\_bs200ns.json. Bunch 150. 630, 630, 630, 631, 6313, 6312, 6312, 6316, 635, 635, 60.329 -8.0 - 7.5 60.323 - 4160.321 - 4.2 4.4 4.5 4.3 60.319 -60.317 -- 5.0 60.315 -- 4.5 60.313 -60.311 -60.309 -

Horizontal tune Q<sub>x</sub>

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