```
HL-LHC v1.6. E = 7.0 TeV. CC = 0.0 \murad. N<sub>b</sub> \simeq 2.2 \times 10^{11} ppb,
                                                                                                     L_{1/5} = 0 \text{cm}^{-2} \text{s}^{-1}, L_2 = 0 \text{cm}^{-2} \text{s}^{-1}, L_8 = 0 \text{cm}^{-2} \text{s}^{-1}
                                                                                                            \beta_{y_1}^* = 0.9 \text{ m}, \beta_{y_1}^* = 1.8 \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 \ 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 -
                                                     $\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\delta\,\de
 $\leq 4.0 \leq 4.0 \l
 - 5.0
 60.315 - \le 4.0 \le 4.0 \le 4.0 \le 4.0 \le 4.0 \le 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  - 4.5
60.313 - \le 4.0 \le 4.0 \le 4.0 4.0
 60.311 - 40
 60.309 -
                                                                                                                                                                                Horizontal tune Q<sub>x</sub>
```

rertical tune Q<sub>v</sub>