Injection HL (from run III optics).  $E=0.45~\text{TeV}.~N_b\simeq 2.3\times 10^{11}~\text{ppb},$   $\beta_{x,~1}^*=10~\text{m},~\beta_{y,~1}^*=10~\text{m},~\text{polarity IP}_{2/8}=1/1,~\text{phase\_change}=0$   $\sigma_z=7.61~\text{cm},~\epsilon_n=2.5~\mu\text{m},~Q^{'}=15.0,~I_{MO}=45~\text{A},~C^{-}=0.001$   $25\text{ns}\_2452\text{b}\_2440\_1952\_2240\_248\text{bpi}\_12\text{inj}.~\text{Bunch }1130.$ 

