

# TUNE DEPENDENCE OF THE COUPLED- BUNCH RESISTIVE WALL EFFECTIVE IMPEDANCE OF AN LHC COLLIMATOR

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# PARAMETERS USED

## ◆ Machine and Beam

$$p = 7 \text{ TeV}/c$$

$$M = 3564$$

$$N_b = 1.1 \times 10^{11} \text{ p/b}$$

$$Q_s = 2.12 \times 10^{-3}$$

$$\tau_b = 1 \text{ ns}$$

$$\xi_y = 0$$

$$\alpha_1 = 3 \times 10^{-4}$$



$$\gamma_t = 57.7$$

$$Q_y = 59 + q_y$$

$$q_y = 0.02, 0.12, 0.22, 0.32, \dots, 0.92$$

Reference case

## ◆ Collimator (graphite)

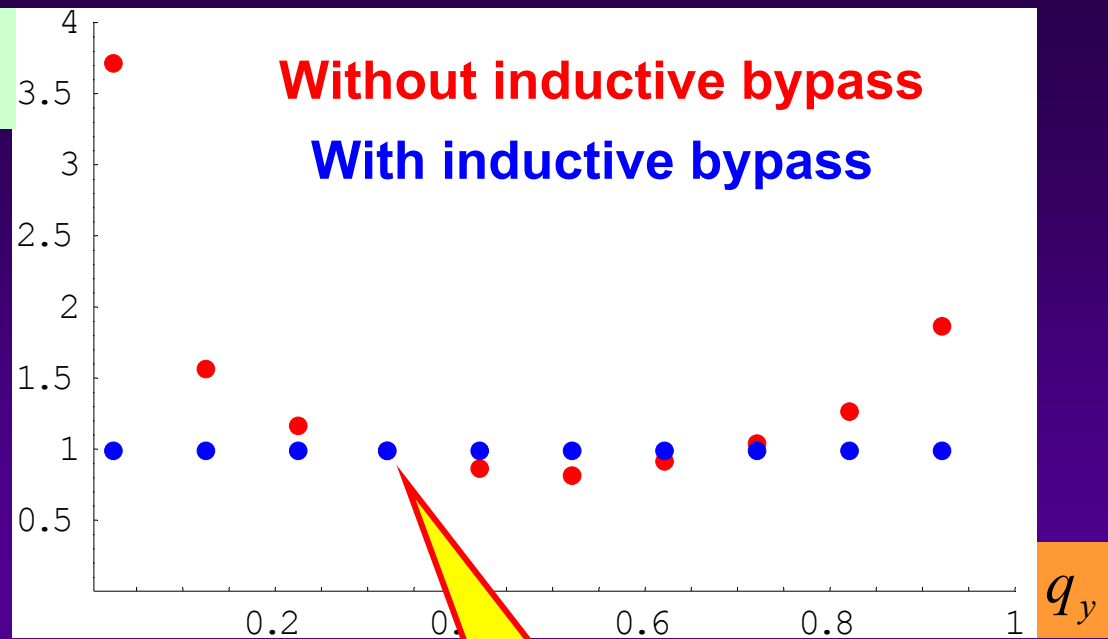
$$b = 2 \text{ mm}$$

$$l = 20 \text{ m}$$

$$\rho = 18.1818 \times 10^{-6} \text{ } \Omega\text{m}$$

$$\beta_y = 2 \times \beta_{av} = 143 \text{ m}$$

$$\text{Re} \left[ \Delta\omega_{c,m=0}^{y,q_y} \right] / \text{Re} \left[ \Delta\omega_{c,m=0}^{y,q_y=0.32} \right]$$



$$\text{Im} \left[ \Delta\omega_{c,m=0}^{y,q_y} \right] / \text{Im} \left[ \Delta\omega_{c,m=0}^{y,q_y=0.32} \right]$$

