

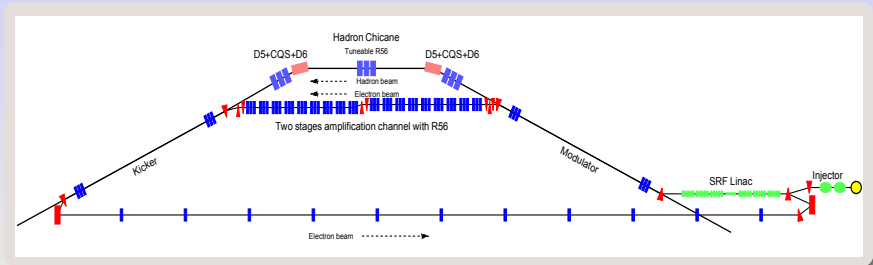
CSR and space charge impedance in MBEC for EIC

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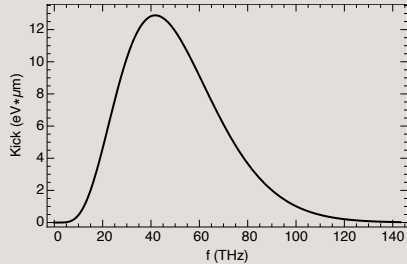
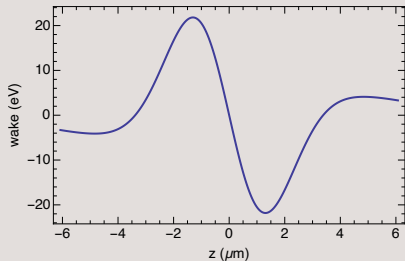
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MBEC for EIC



We have 3 chicanes that generate CSR impedance and 2 drifts with SC impedance in the 2 amplification. Two chicanes have $R_{56} = 0.68$ cm, and one $R = -1.52$ cm.

Wake and its spectrum for EIC SHC

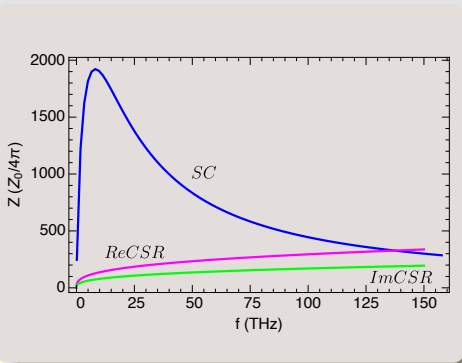


CSR and CS impedance, 275 GeV

The CSR impedance (per unit length) is calculated in 1D model

$$Z_{\ell}(\omega) = \frac{Z_0}{4\pi} \frac{\sqrt{3} + i}{3^{1/3}} \left(\frac{\omega}{c\rho^2} \right)^{1/3} \Gamma\left(\frac{2}{3}\right)$$

The space charge impedance we calculate in the slice model. We have 82 m of drifts in the amplifier and 12 bending magnets of total length 2.8 m and ρ from 2.12 to 3.2 m.



Comment: we do not have large density modulation in chicanes (only in the last bend).