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Design and optimisation of an 800 MHz 5-cell elliptical SRF cavity for T¯t working point of the future circular Electron-Positron Collider

Monday, 8 May 2023 16:30 (2 hours)

The Future Circular electron-positron Collider (FCC-ee) is planned to operate with beam energies from 45.6 to 182.5 GeV and beam currents from 5 to 1400 mA. This will enable precision physics at the four operational points, Z, W and Higgs boson and the top and anti-top quarks. This work will focus on the RF structure design for the ttbar operation point to reach a beam energy and current of 182.5 GeV and 5 mA, respectively. A 5-cell elliptical SRF cavity operating at 801.58 MHz is designed and optimized with a strong focus on minimizing higher-order modes impedances.

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