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Cavity string design of the EIC ESR 591 MHz SRF cryomodule

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The Electron Ion Collider's (EIC) electron storage ring (ESR) requires a 591 MHz fundamental SRF system, providing up to 68 MV bunching voltage and replenishing up to 10 MW beam power loss from both synchrotron radiation and HOM. The high beam current of up to 2.5 A and a charge of up to 28 nC per bunch, combined with the large number of cavities and an operation energy as low as 5 GeV, impose very challenging HOM damping requirements. These include not only very high HOM power but also stringent limits on both the narrowband and the broadband impedance for all the cavity string components. In this paper, we will report the progress of the design of this cavity string.

I have read and accept the Privacy Policy Statement

Yes

Footnotes

Funding Agency

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