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Contactless RF shielded beamline warm-to-cold transition bellows for EIC ESR cryomodules

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In EIC ESR's cryomodules, beamline warm-to-cold transition bellows are required to provide mechanical compliance and thermal insulation for the cavity string. With up to 2.5 A beam current and 27.6 nC charge per bunch in the ESR, all these bellows need to be RF shielded due to concerns of both the tight HOM impedance budget and the strong HOM heating. Sliding contacts are not allowed due to cryomodule cleanliness concerns. In this paper, we will present the latest RF and thermal-mechanical design for these bellows.

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Yes

Footnotes

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