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Plasma processing on low beta SRF elliptical cavities

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Plasma treatment has emerged as an effective method for mitigating field emission and recovering the performance of superconducting radiofrequency (SRF) cavities. A collaborative effort involving CEA, ESS, FNAL, and INFN is currently focused on applying this technique to low-beta elliptical cavities for both the ESS and PIP-II linacs. This paper reports on the ongoing work aimed at developing plasma processing for cavities both installed in cryomodules and assembled for the vertical test. For the ESS cavities, a bead-pull setup has been developed, enabling validation of experimental results against electromagnetic simulations. In parallel, FNAL has conducted simulation studies to identify effective modes for plasma ignition in PIP-II cavities, with experimental work expected to start in the coming months.

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Yes

Footnotes

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