Contribution ID: **497** Contribution code: **MOPB007** Type: **Poster Presentation**

An overview of microphonics in CEBAF and current moderation techniques

Monday 26 August 2024 16:00 (2 hours)

Superconducting RF (SRF) structures are susceptible to frequency detuning from external vibrations and modal mechanical resonances in the structure. These small disturbances, known as microphonics, require additional RF power in CW accelerating structures since the frequency is constantly shifting. In the Jefferson Lab CEBAF accelerator, time and frequency data of this frequency shift have been recorded for many years, allowing a retrospective analysis of different microphonics-mitigation techniques. Some of these techniques are specific to the design of each CEBAF cryomodule, for example implementing BNNT damping material on the cavity string. Other techniques are universal such as affixing vacuum lines and reinforcing waveguide structures.

Footnotes

Funding Agency

This material is based upon work supported by the U.S. Department of Energy, Office of Science, Office of Nuclear Physics under contract DE-AC05-06OR23177.

Primary author: OWEN, Peter (Thomas Jefferson National Accelerator Facility)

Co-author: POWERS, Tom (Thomas Jefferson National Accelerator Facility)

Presenter: POWERS, Tom (Thomas Jefferson National Accelerator Facility)

Session Classification: Monday Poster Session

Track Classification: MC4: Technology: MC4.2 Cryomodules and cryogenics