

# 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

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