Frequency Discretization for Buncher & Phase-Rotator

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FE Overview

- Dave Neuffer is using a continuous range of frequencies on buncher & phase-rotator
- This is not a realistic configuration
- Discretize cavities and evaluate performance
Muon per proton

![Graph showing the number of muons per proton as a function of depth. The graph includes three curves: red for Continuous (120 freq.), blue for 60 freq. (28+32), and black for 30 freq. (14+16). The x-axis represents depth in meters (z), and the y-axis represents the number of muons per proton.]
Emittance

![Graph showing transverse emittance $\varepsilon_T$ as a function of $z$ (m). The graph includes lines for continuous (120 freq.), 60 freq. (28+32), and 30 freq. (14+16).](image)
Phase scan for cooler

- $\phi = 30$ (Base)
- $\phi = 35$
- $\phi = 40$

Graph showing $\mu$ per proton versus $z$ (m) with three different phases.