



Contribution ID: 2388 Contribution code: MOPA025

Type: **Poster Presentation**

## **First coaxial HOM coupler prototypes and RF measurements on a copper cavity for the PERLE project**

*Monday, 8 May 2023 16:30 (2 hours)*

The PERLE (Powerful Energy Recovery Linac for Experiments) project relies on superconducting RF (SRF) cavities to reach its goals. The installation of coaxial couplers on the cutoff tubes of SRF cavities is foreseen for damping cavity's Higher Order Modes (HOMs). The prototyping and fabrication of 3D-printed HOM couplers for the PERLE cavity have recently started in collaboration with JLab and CERN. This paper provides an overview of the design of the fabricated HOM couplers and the first RF measurements of the cavity's HOMs performed at warm on an 801.58 MHz 2-cell copper cavity to validate coupler design performances. Measured cavity data is also compared to eigenmode simulations to confirm simulated results and see to what extent any reduction in damping can be predicted.

### **Funding Agency**

### **Footnotes**

### **I have read and accept the Privacy Policy Statement**

Yes

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**Session Classification:** Monday Poster Session

**Track Classification:** MC1: Colliders and other Particle Physics Accelerators: MC1.A18: Energy Recovery Linacs(ERLs)