



Contribution ID: 1770 Contribution code: WEPA139

Type: **Poster Presentation**

## HOM power in the EIC crab cavity system

*Wednesday, 10 May 2023 16:30 (2 hours)*

Two types of crab cavities, one at 197 MHz and the other at 394 MHz, are designed to compensate the loss of luminosity due to a 25 mrad crossing angle at the interaction point (IR) in the Electron Ion Collider (EIC). The Higher Order Mode (HOM) damper designs of the EIC differs from the LHC designs since in the EIC the impedance budget is tighter, especially longitudinally, and in the EIC the HOM power is much higher due to the short and high intensity electron and ion beam. In this paper, HOM power in these two cavities are evaluated and optimized.

### Funding Agency

Work supported by Brookhaven Science Associates, LLC under U.S. DOE contract No. DE-SC0012704, by Jefferson Science Associates, LLC under U.S. DOE Contract No. DE-SC0002769, and by DOE Contract No. DE

### Footnotes

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

Yes

**Primary author:** XIAO, Binping (Brookhaven National Laboratory)

**Co-authors:** LI, Zenghai (SLAC National Accelerator Laboratory); XU, Wencan (Brookhaven National Laboratory); PARK, Gunn-Tae (Thomas Jefferson National Accelerator Facility); WANG, Haipeng (Thomas Jefferson National Accelerator Facility); DELAYEN, Jean (Thomas Jefferson National Accelerator Facility); GUO, Jiquan (Thomas Jefferson National Accelerator Facility); WU, Qiong (Indiana University Cyclotron Facility); RIMMER, Robert (Thomas Jefferson National Accelerator Facility); WANG, Shaoheng (Thomas Jefferson National Accelerator Facility); VERDU-ANDRES, Silvia (Brookhaven National Laboratory (BNL)); DE SILVA, Subashini (Old Dominion University)

**Presenter:** XIAO, Binping (Brookhaven National Laboratory)

**Session Classification:** Wednesday Poster Session

**Track Classification:** MC7: Accelerator Technology and Sustainability: MC7.T07: Superconducting RF