



Contribution ID: 1464 Contribution code: TUPG03

Type: **Poster Presentation**

3rd harmonic active EU-HOM damped cavity commissioning results

Tuesday, 21 May 2024 16:00 (2 hours)

A collaboration agreement between the ALBA, DESY and HZB institutions was signed on 2021 in order to commission the 3rd harmonic normal conducting, HOM damped, active cavity designed and prototyped by ALBA. The cavity prototype arrived to ALBA in December 2021, and successfully passed the low power RF and vacuum tests. Afterwards, in January 2022 it was sent to HZB and mounted in the SUPRALAB@HZB, in the HoBiCat bunker for bead-pull measurements and high-power conditioning. Finally, in May 2022 the cavity was installed in the BESSY-II ring for test with beam. In this contribution we summarize and highlight the major results after two years of commissioning with beam including the lengthening capability of the cavity for single bunch and homogeneous filling pattern, lifetime increase measurements, HOM damping capability and transient beam loading effects due to the presence of a gap in the filling pattern.

Footnotes

Funding Agency

Paper preparation format

LaTeX

Region represented

Europe

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Session Classification: Tuesday Poster Session

Track Classification: MC2: Photon Sources and Electron Accelerators: MC2.A05 Synchrotron Radiation Facilities