SRF2025 TOKYO

22ND INTERNATIONAL CONFERENCE ON RF SUPERCONDUCTIVITY

September 21-26, 2025

Contribution ID: **184** Contribution code: **THP77** Type: **Poster Presentation**

# Development of 1.5 GHz harmonic superconducting cavity and cryomodule

*Thursday 25 September 2025 14:30 (3 hours)*

The Institute of High Energy Physics (IHEP) developed the 1.5 GHz high -order harmonic cavity system for the Hefei Advanced Light Facility (HALF) project. This paper primarily introduces the design and development of the 1.5 GHz high-order harmonic superconducting cavity and cryomodule. The structure of the harmonic cavity has been simplified, and an integral welding method for the cavity with helium vessel has been adopted to enhance operational reliability. This not only reduces the complexity of the cavity but also minimizes potential failure points, thereby significantly improving the stability and performance of the 1.5 GHz high-order harmonic cavity system during operation. The design and development strategies presented here provide valuable references for similar high-frequency superconducting cavity projects in the future.

## I have read and accept the Privacy Policy Statement

Yes

## Footnotes

## Funding Agency

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**Session Classification:** Thursday Poster Session

**Track Classification:** MC4: SRF Technologies