



Contribution ID: 528 Contribution code: WEPS29

Type: **Poster Presentation**

## Status of the power coupler for the half wave resonator in IRIS

*Wednesday, 22 May 2024 16:00 (2 hours)*

The Institute of Rare Isotope Science (IRIS) has a heavy-ion accelerator facility in Daejeon, Korea. The cryomodule with quarter-wave resonators (QWR) and half-wave resonators (HWR) were also installed in the SCL3 tunnel and a beam operation test (Beam energy = 17.6 MeV/u) was performed. However, the frequency drift of the HWR is one of the failures of the beam control. Therefore, the multi-physics analysis, which includes electromagnetic, thermal, and mechanical analysis, is performed to evaluate the deformation of the outer conductor and the antenna of the power coupler. The required power of the power coupler for HWR is 4 kW in CW mode at 162.5 MHz. The geometry of the power coupler is a coaxial capacitive type based on a conventional 1-5/8 inch electronic industries alliance (EIA) 50  $\Omega$  coaxial transmission line with a single ceramic window. In this paper, we present the status and analysis results of the power coupler for HWR.

### Footnotes

### Funding Agency

Institute for Rare Isotope Science

### Paper preparation format

LaTeX

### Region represented

Asia

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**Session Classification:** Wednesday Poster Session

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