

Development of the Cavity Resonance Control System for Low-energy Superconducting Linac at RAON Accelerator

Thursday, November 14, 2024 1:00 PM (1h 30m)

Recently the installation and first beam commissioning of the low energy section (SCL3) of a heavy ion accelerator RAON has been finished. The operating RF frequency for SCL3 are 81.25 MHz and 162.5 MHz. Each cavity will be controlled independently to accommodate the acceleration of the various A/q ions. All cavities in RAON SCL3 are the superconducting cavities and the planned beam current is not so high, the control bandwidth which is defined by the loaded Q of the power coupler are not wide relatively. Also there is a slow cavity resonance frequency drift caused by the LHe pressure long-term drift, etc. For the stable RF operation, it is required to measure the shifted cavity resonance frequency and to keep the cavities near to the operating RF frequency. We developed a cavity resonance control system for RAON SCL3. The shifted cavity resonance frequency is measured by the LLRF and this information are sent to the tuner control system and it controls the slow tuner to tune the cavities. In this presentation the status and test result of cavity resonance control system for RAON SCL3 will be described

Contribution track

ICABU WG1. Accelerator Systems

Paper submission Plan

Best Presentation

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