



Contribution ID: 75

Type: **Oral presentation (in person)**

Cavity tuner development for the ITN cryomodule at KEK

Tuesday 9 July 2024 11:00 (20 minutes)

In this contribution we report on the development of a cavity tuner for a cryomodule, which is being developed and will be built and tested in the scope of the International Linear Collider (ILC) Technology Network (ITN) at KEK until 2027. We have simulated Lorentz-force detuning of the according SRF 1.3 GHz 9-cell TESLA-type cavities to understand the tuner requirements better. As a base of the ITN cavity tuner design the LCLS-II double-lever tuner was selected. In a collaboration with Fermilab we have tested the LCLS-II tuner on an LCLS-II cavity at room temperature and atmospheric pressure. Based on the gained experience, design adjustments are being considered. Slow and fast tuner driving electronics were partially selected.

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Primary author: Dr OMET, Mathieu (High Energy Accelerator Research Organization (KEK))

Co-authors: YAMAMOTO, Akira; Dr KUMAR, Ashish (KEK); Mr CONTRERAS-MARTINEZ, Crispin (FNAL); UMEMORI, Kensei (KEK); DOHMAE, Takeshi; YAMAMOTO, Yasuchika (KEK); PISCHALNIKOV, Yuriy (FNAL)

Presenter: Dr OMET, Mathieu (High Energy Accelerator Research Organization (KEK))

Session Classification: Superconducting RF

Track Classification: Accelerator: Superconducting RF