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Cavity tuner development for the ITN cryomodule at KEK

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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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