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Cryomodule Tests in STF Phase-1 at KEK

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Purpose of STF Cryomodule Test

- To check the performance as a total **superconducting cavity system**, and to find out the improvement points for the future project.
- To confirm a stable pulsed operation at higher fields, and to compare the **achieved Eacc,max** in the cryomodule tests with the results in the vertical tests.
- To demonstrate a compensation of **Lorentz force detuning** by a piezo tuner, and to establish the effectiveness of an improved stiffness in a cavity support structure.

SUMMARY

- Two notable progress were made in this cryomodule tests containing four Tesla-like cavities;
- A stable pulsed operation at **32 MV/m** was achieved in one of four cavities with no degradation from the vertical test results.
- Successful compensation of Lorentz force detuning at **31 MV/m** was demonstrated by pre-detuning and a piezo tuner.

