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# Design study of a cryomodule that meets ILC requirements at KEK

*Tuesday 23 September 2025 14:30 (3 hours)*

A 5-year project called MEXT Advanced Accelerator element Technology Development began in FY2023 at KEK. The goal of this project is to manufacture one cryomodule (CM) that meets the requirements of International Linear Collider (ILC) and to test completed CM at cryogenic temperature. ILC model CM consists of nine cell superconducting cavities, magnetic shields, power couplers, tuners, cooling piping to cool the cavities to 2 K, two layers of thermal shields cooled to 80 K and 5 K respectively, a superconducting magnet and a beam position monitor. In this development, we are also aiming to reduce the manufacturing costs of the CM. Two layers of thermal shield in ILC model CM were changed to single layer thermal shield in the KEK design to reduce costs and to simplify the structure. Pipes which are compliant with JIS (Japanese Industrial Standard) and easy to procure in Japan will be used in this CM. For the cooling test, the placement of temperature sensors on each component was considered. The feedthroughs were newly designed for various sensors, monitors and power supplies. This development will contribute to establish technologies of superconducting accelerator and is a step toward the realization of the ILC. This presentation will report on the status of designing and manufacturing of the CM.

## I have read and accept the Privacy Policy Statement

Yes

## Footnotes

## Funding Agency

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