



Contribution ID: 42

Type: **Poster**

## **C2Po1E-08: Real time heat load calculation software based on EPICS for Fermilab PIP-II CM tests**

*Tuesday 20 May 2025 09:15 (1h 45m)*

Fermilab has a project to improve the proton beam energy which is called PIP-II (the 2nd Proton Improvement Plan). There is a superconducting linear accelerator, LINAC, to improve the proton beam power and the LINAC consists of 5 types of cryomodules (CM), 1 HWR CM, 2 SSR1 CM, 4 SSR2 CM, LB650 CM, and HB650 CM. The prototypes of these cryomodules are being tested at Fermilab's CryoModule Test Facility (CMTF). Heat load measurements are an important part of the prototype CM testing.

The CMTF cryogenic control system was developed based on the ACNET (Accelerator Control NETWORK) for CM testing for other projects, but the PIP-II cryogenic control system will be implemented using the Experimental Physics and Industrial Control System (EPICS). As part of the prototype CM testing campaign an EPICS based control system has been implemented at CMTF. This EPICS cryogenic control system includes real time heat load calculation software utilizing the Fortran implementation of Hepak.

This paper details the real time heat load calculation software developed for the prototype CM testing including the first results from the HB 650 CM.

**Author:** YOON, Sungwoon (Fermilab)

**Co-authors:** HANLET, Pierrick (Fermilab); MAKARA, Jerry (Fermilab); PEI, Liujin (Fermilab); RANPARIYA, Shreya (Fermilab); PATEL, Pratik (Fermilab); DONG, Jun (Fermilab); PORWISIAK, Dominika (Fermilab); WHITE, Michael (Fermilab)

**Presenter:** YOON, Sungwoon (Fermilab)

**Session Classification:** C2Po1E - Instrumentation, Visualization, and Controls I