



Contribution ID: 1626 Contribution code: WEPG77

Type: **Poster Presentation**

Charge measurement systems on CLARA at Daresbury laboratory

Wednesday 22 May 2024 16:00 (2 hours)

CLARA is a 250 MeV electron facility at Daresbury Laboratory, which will provide short bunches between 1 and 250 pC for a variety of experiments, including novel acceleration experiments. As part of the Phase 2 upgrade new charge measurement systems have been installed. This paper presents the charge measurement systems that will be used on CLARA, as well as commissioning results without beam for some of those systems. CLARA will include a Wall Current Monitor (WCM), 3 Integrating Current Transformers (ICTs) and five Faraday cups. The ICTs are commercial systems by Bergoz, while a custom front-end has been designed for the WCM and Faraday cups, which includes calibration circuitry and switchable gain. Calibration results, including measurements of resolution, are presented for the in-house front-end design.

Footnotes

Funding Agency

Paper preparation format

LaTeX

Region represented

Europe

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Session Classification: Wednesday Poster Session

Track Classification: MC6: Beam Instrumentation, Controls, Feedback, and Operational Aspects: MC6.T03 Beam Diagnostics and Instrumentation