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Qualitative measurements of bunch length at CLARA using coherent transition radiation

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Bunch length is an important metric for user experiments at the Compact Linear Accelerator for Research and Applications (CLARA). A prototype Bunch Compression Monitor (BCM) based on Coherent Transition Radiation (CTR) was recently installed and commissioned to support recent user experiments. The intensity of CTR is measured using a pyroelectric detector. A noise cancellation scheme based on a second detector offset from the focus of the CTR was used to reduce the noise caused by the broadband nature of pyroelectric detectors. Qualitative measurements of the bunch length as a function of RF phase are presented, along with an overview of the system design. Plans for an improved system are also presented.

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Footnotes

I have read and accept the Privacy Policy Statement

Yes

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