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Beam Measurements from Proton Testbeam At KAHVE-Lab

Thursday, 11 May 2023 16:30 (2 hours)

The Proton Testbeam At KAHVE-Lab project aims to accelerate protons to 2 MeV energy using a locally designed and built linear proton accelerator. An optimized Low Energy Beam Transport (LEBT) line is installed to transfer the protons from the ion source towards the Radio Frequency Quadrupole cavity operating at 800 MHz. The LEBT line includes a compact measurement station to determine the proton beam current and profile as well as the beam emittance using the pepper pot plate method and the locally developed image analysis software.
In this presentation, results from the beamline commissioning is shown: the low energy beam properties were measured at the diagnostics station for different focusing solenoid currents and compared to expectations from beamline simulations. Beam profiles obtained with different screens will be discussed for a comparison between scintillator materials. Finally, the ion source has also been upgraded from using electromagnets to a setup with permanent magnets. The initial results from this upgrade will also be shown

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Footnotes

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Yes

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