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Emittance Characterisation at the RFQ Exit of FETS Using Tomographic reconstruction

Tuesday 9 September 2025 16:00 (2 hours)

Understanding the transverse emittance of the beam emerging from the RFQ is an important step in commissioning the Front End Test Stand (FETS) accelerator and ensuring proper matching into the downstream transport line. In this work, we present transverse emittance measurements taken at the output of the 3 MeV RFQ using the quadrupole scan method. To complement the RMS analysis, a tomographic reconstruction of the phase space has been carried out, allowing for a more detailed view of the beam distribution, including any asymmetries or non-Gaussian features. The experimental setup, data acquisition process, and reconstruction techniques are described, and the results are compared with simulation to assess RFQ performance. These measurements form part of the broader effort to characterise the beam and optimise the transport through the FETS beamline.

Footnotes

Funding Agency

I have read and accept the Conference Policies

Yes

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