

Electron Beam Diagnostics for Recirculating and Energy Recovered Linacs*

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Abstract

In this paper, the electron beam diagnostics developed for recirculating electron accelerators will be reviewed. The main novelties in dealing with such accelerators are (1) to have sufficient information and control possibilities for the longitudinal phase space, (2) to have means to accurately set the recirculation path length, and (3) to have a means to distinguish the beam passes on measurements of position in the linac proper. The solutions to these problems obtained at Jefferson Laboratory and elsewhere will be discussed. In addition, more standard instrumentation (profiling and emittance measurements) will be reviewed in the context of recirculating linacs. Finally, and looking forward, electron beam diagnostics for applications to high current energy recovered linacs will be discussed.

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