
Electron beam dynamics on the 10 MeV industrial accelerator using Poisson code

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We present a series of analytic expression to the beam dynamics in a industrial accelerator. The analytic expression can be used to model the linac optics, calculate the magnitude of the wakefields, estimate the emittance dilution due to misaligned accelerator component. we present the probability distribution for the emittance dilutions and describe some of the more advanced correction techniques of emittance dilutions. Also we have simulated 10 MeV electron industrial accelerator with electron beam gun and gunshield using Poisson code.