



Contribution ID: 23

Type: **not specified**

## Space charge in linear machines

*Thursday 14 November 2024 08:30 (1 hour)*

Space charge forces are those generated directly by the charge distribution within the bunch. In this lecture we introduce, from basic principles, the main concepts of beam focusing and transport in high brightness linacs and injectors under the effects of space charge forces using the beam envelope equation as a convenient mathematical tool. Matching conditions suitable for preserving beam quality are derived from the model for significant beam dynamics regimes.

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