



Contribution ID: 25

Type: **not specified**

Space charge in circular machines

Thursday 14 November 2024 11:00 (1 hour)

Space charge forces are those generated directly by the charge distribution, with the inclusion of the image charges and currents due to the interaction of the beam with a perfectly conducting smooth pipe. Space charge forces are responsible of several unwanted phenomena related to beam dynamics, such as energy loss, shift of the synchronous phase and frequency, shift of the betatron frequencies, and instabilities. We will discuss in this lecture the main feature of space charge effects in high energy storage rings.

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