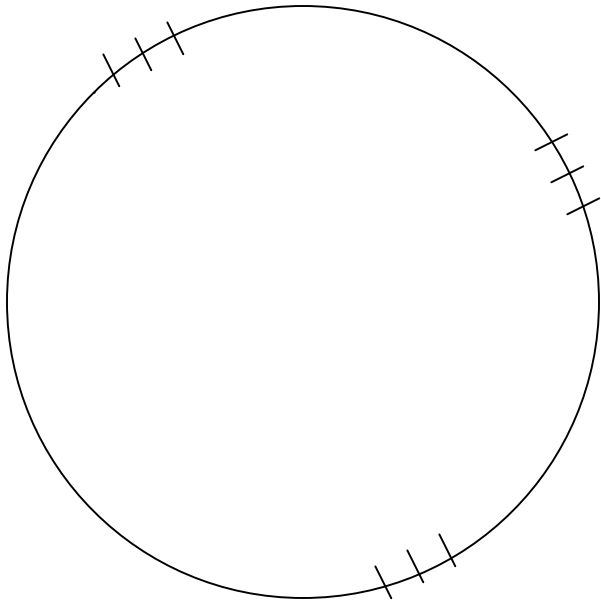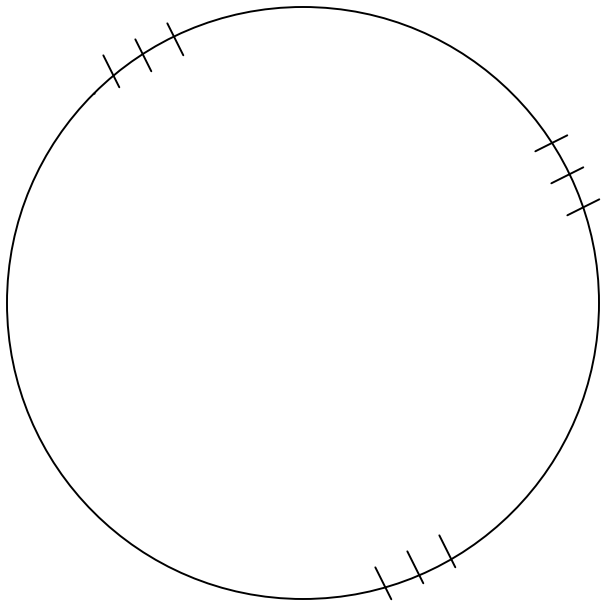# Electron Cloud Modeling

Daniel Carmody
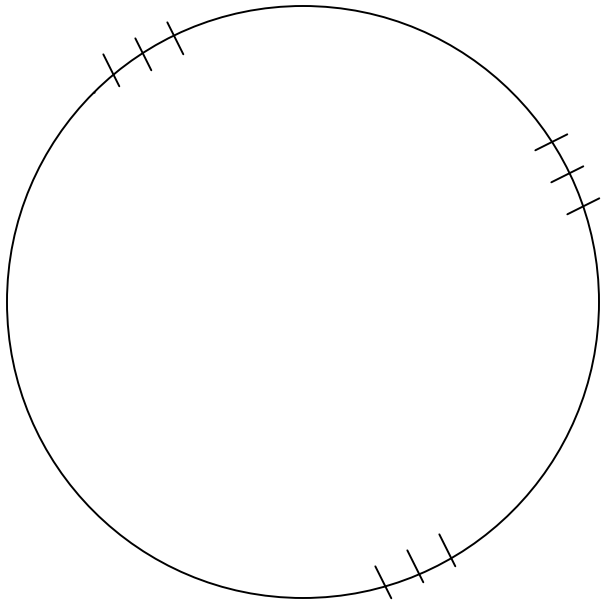
Goals

1. Analytical Model

2. "ECLOUD" Simulation

Electron Cloud Modeling

Bunches generate a cloud of electrons

- build-up
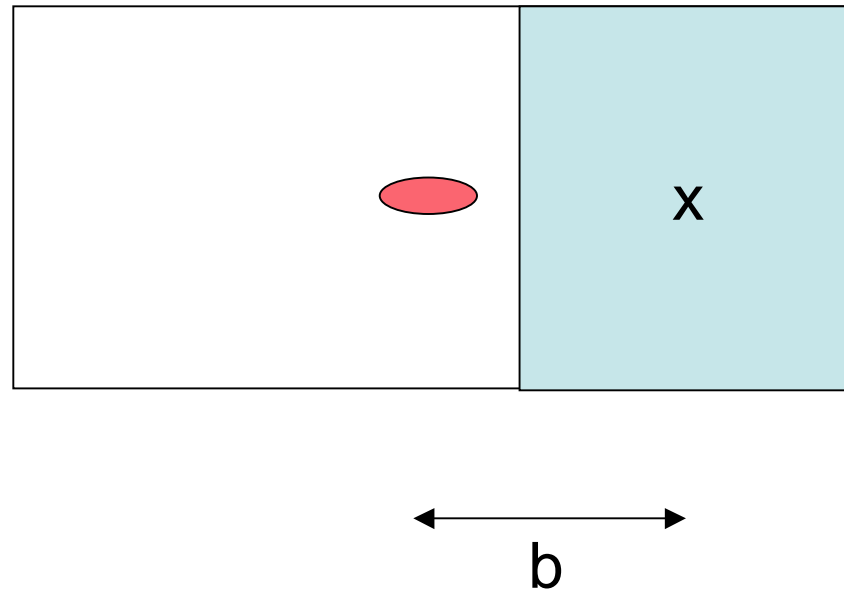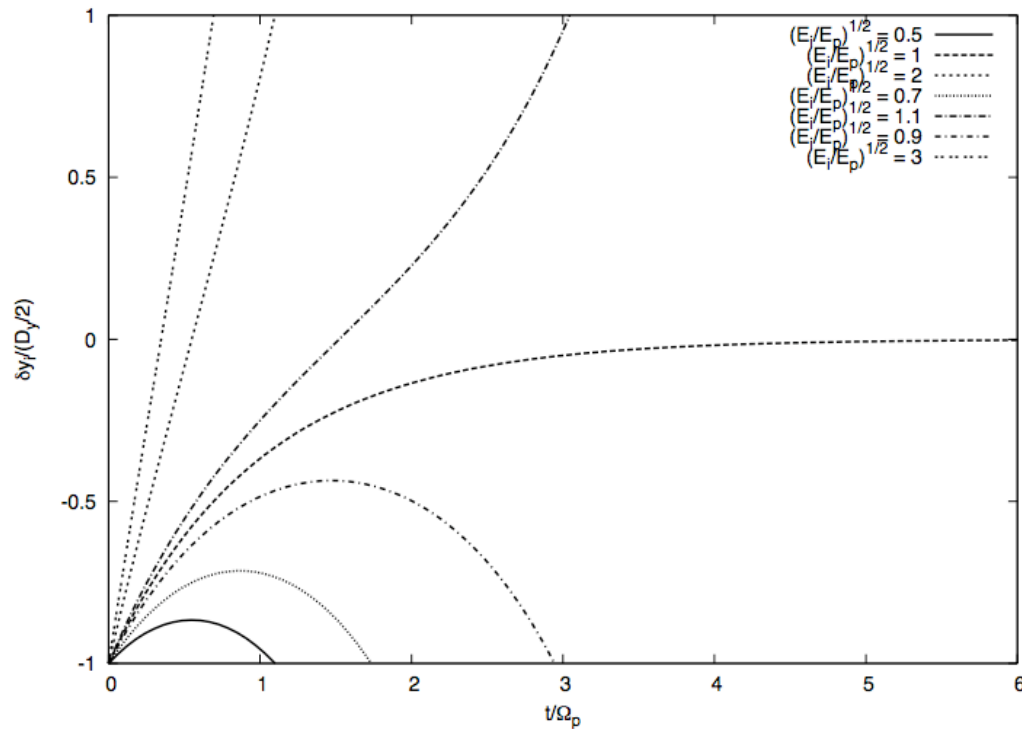- equilibrium
- decay

lifetime

Electron Cloud Modeling

Is there an optimal bunch/train spacing to minimize the average cloud density?

Electron Cloud Modeling

- Potential of cloud
- Force on electron
- Position as function of time

$E)$

Electron Cloud Modeling

Average lifetime
- energy distribution