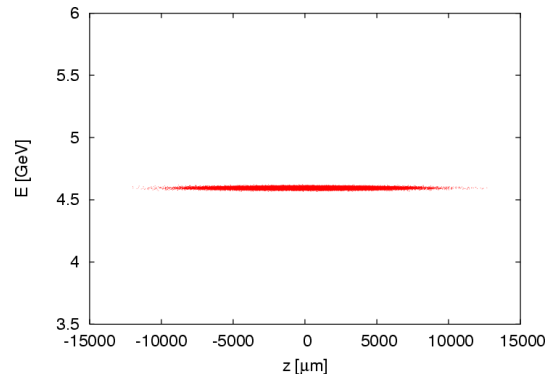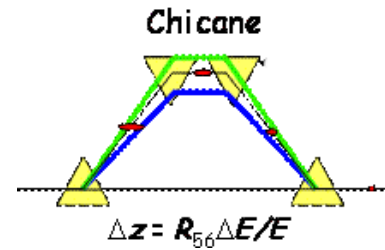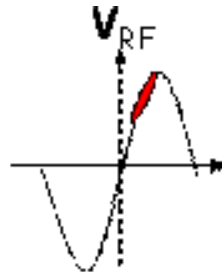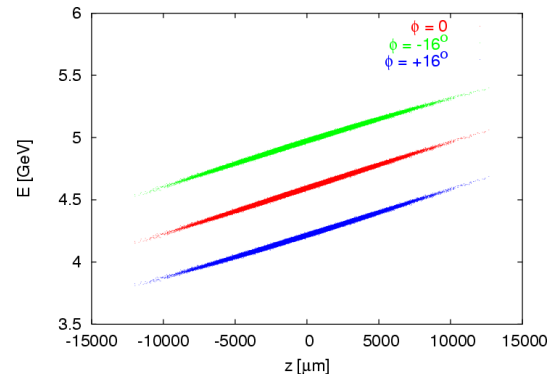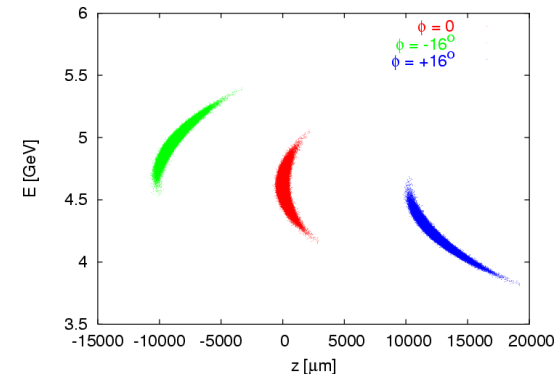# RF Phase, Bunch Compression and DFS

- Off-phase beams get different acceleration, therefore they gain different energy

  $\Rightarrow$ they may work as *help beams* for Dispersion Free Steering.

Simulation Procedure and First Results

- Bunch Compressor:

  - Hand-made lattice

  - Full six-dimensional tracking in the BC

  - Synchrotron radiation emission considered

- Emittance growth reduction:

  - 1. One-to-One Correction

  - 2. Dispersion Free Steering

  - 4. Emittance Tuning Bumps (P.Eliasson)

Emittance growth as a function of $\Delta\phi$

Emittance growth along the machine as a function of $\omega_{2,k}$