

## Storage ring technology

- Dynamic aperture      model vs. meas.
- Energy aperture
- Correction schemes ( BBA, ... )

## Coherent Synchrotron Radiation

- ? wigglers in ring
- $\mu$ -bunching

## Diagnostics

- Measure 1 pm emittances

## Small emittance gun technology

- $\gamma E \sim 10^{-6}$  m.rad      a glass floor?  
flat vs. round beams

## Very short pulses

# Gun development

- State of the art: normalized emittance  $> 1 \text{ mm.mrad}$
- DC guns: factor 2-5 smaller emittance ???
- Laser – plasma gun: more then order of magnitude better