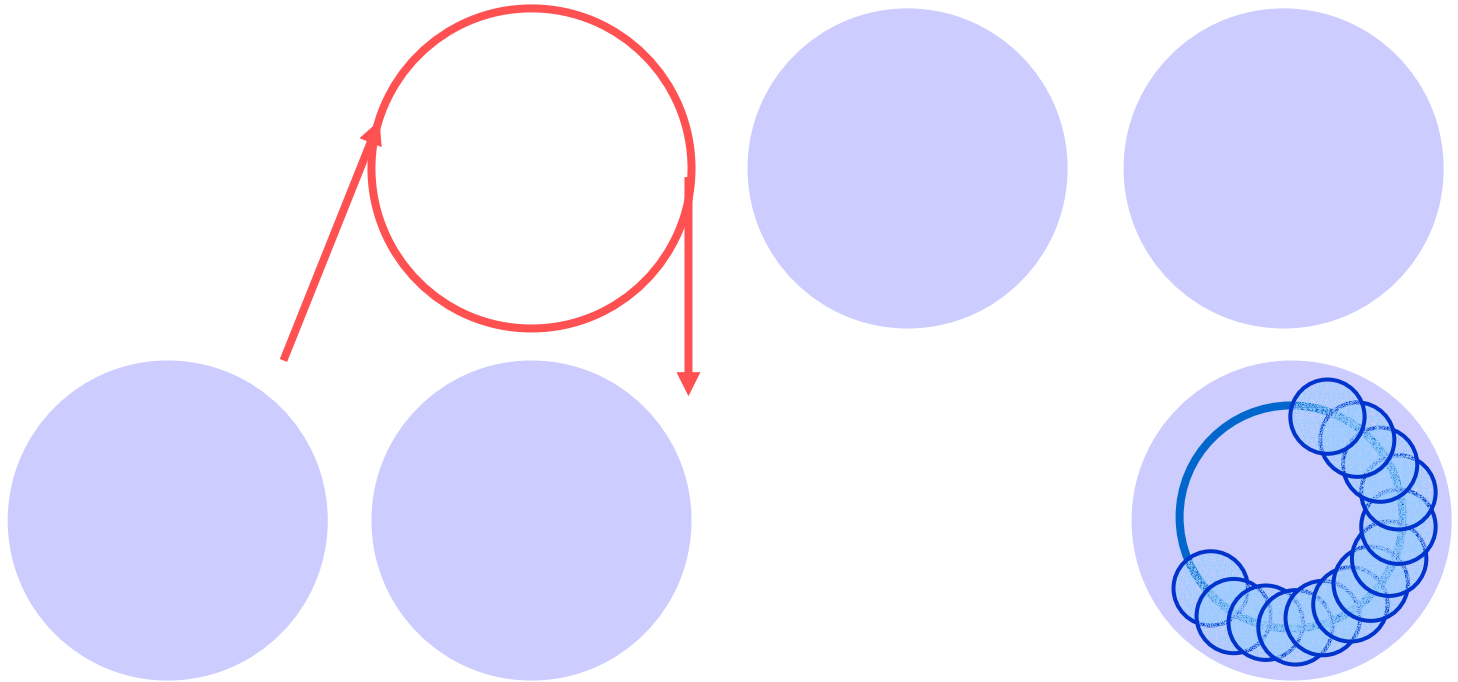


HITRAP beamlines and Cooler trap



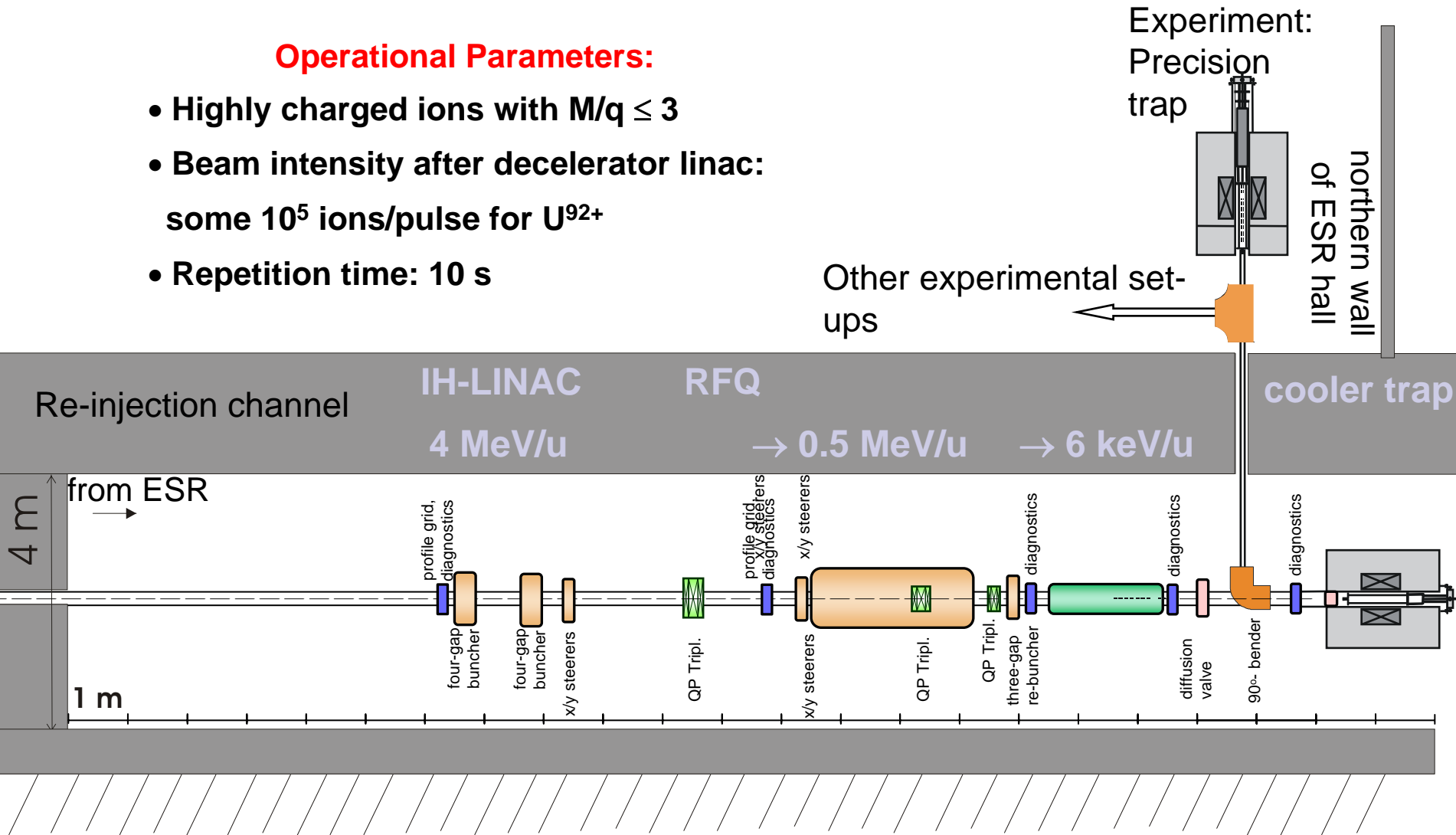
Frank Herfurth

for the HITRAP collaboration

Overview

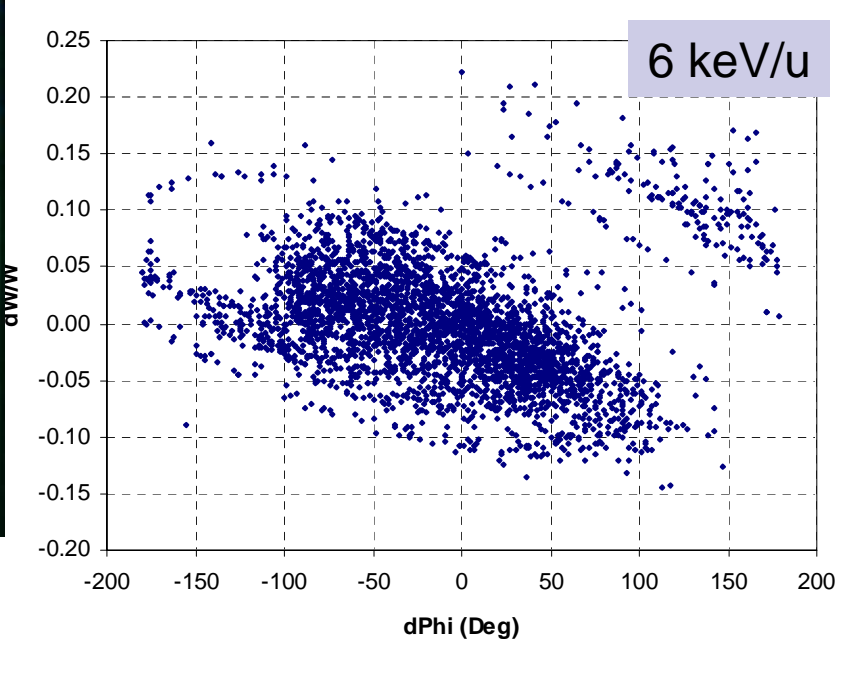
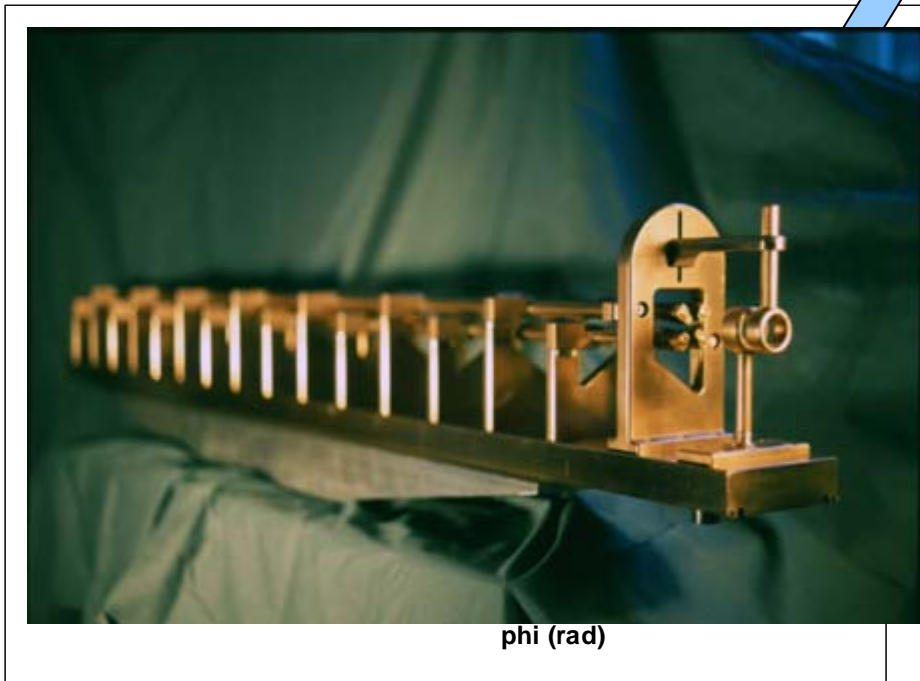
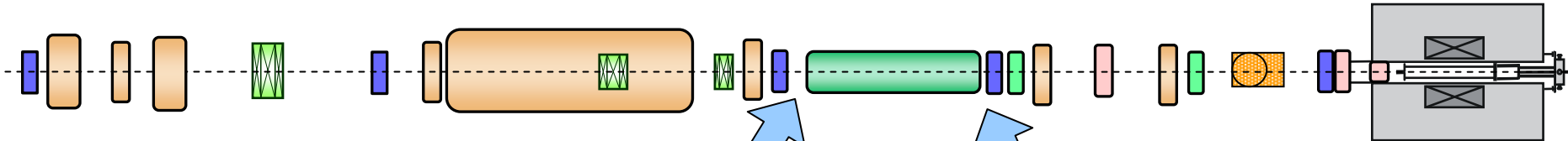
Operational Parameters:

- Highly charged ions with $M/q \leq 3$
- Beam intensity after decelerator linac: some 10^5 ions/pulse for U^{92+}
- Repetition time: 10 s

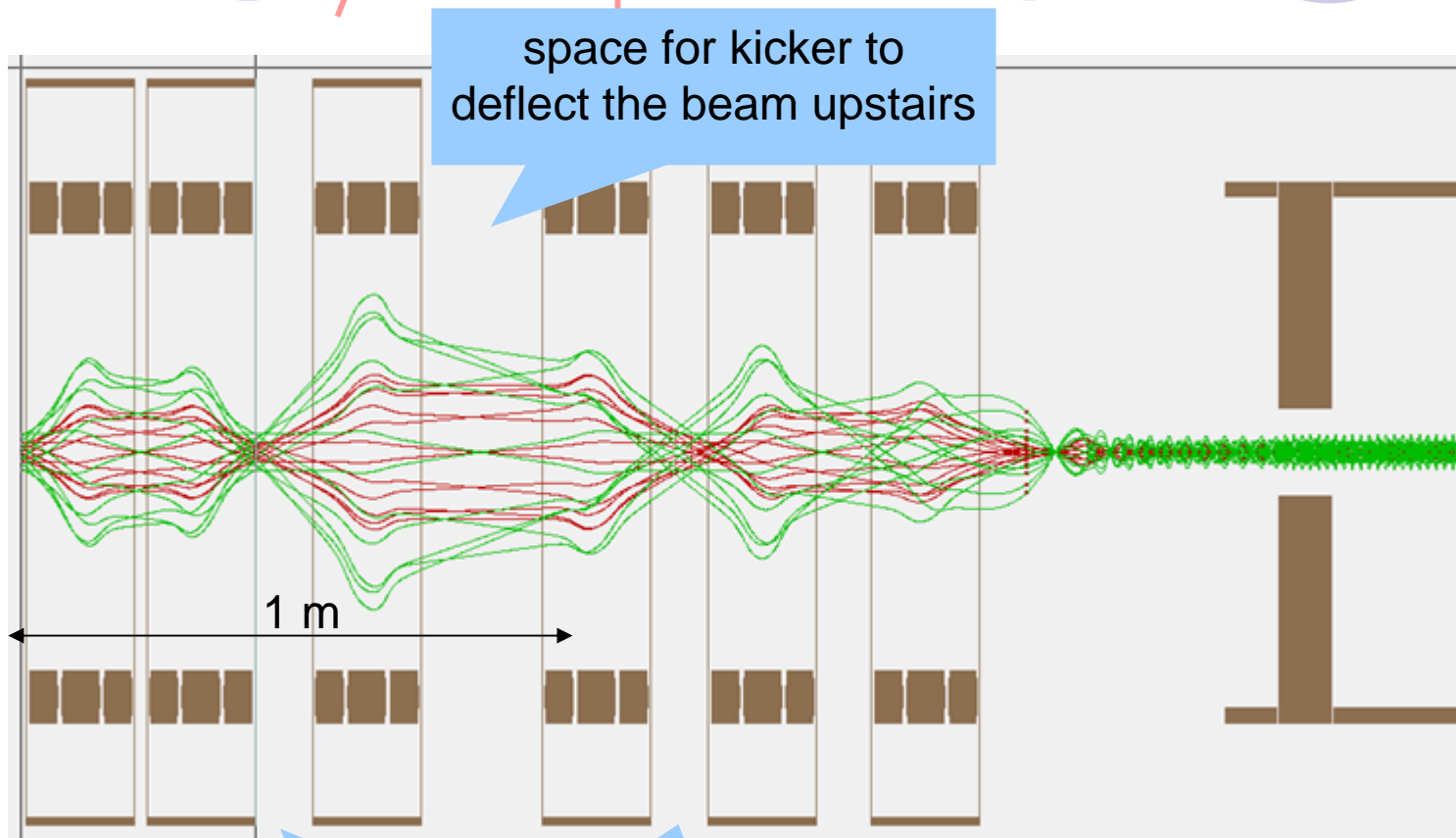


IH-Structure & RFQ

4 MeV/u – 6 keV/u



LE-Beam-Line using Tube-Lenses

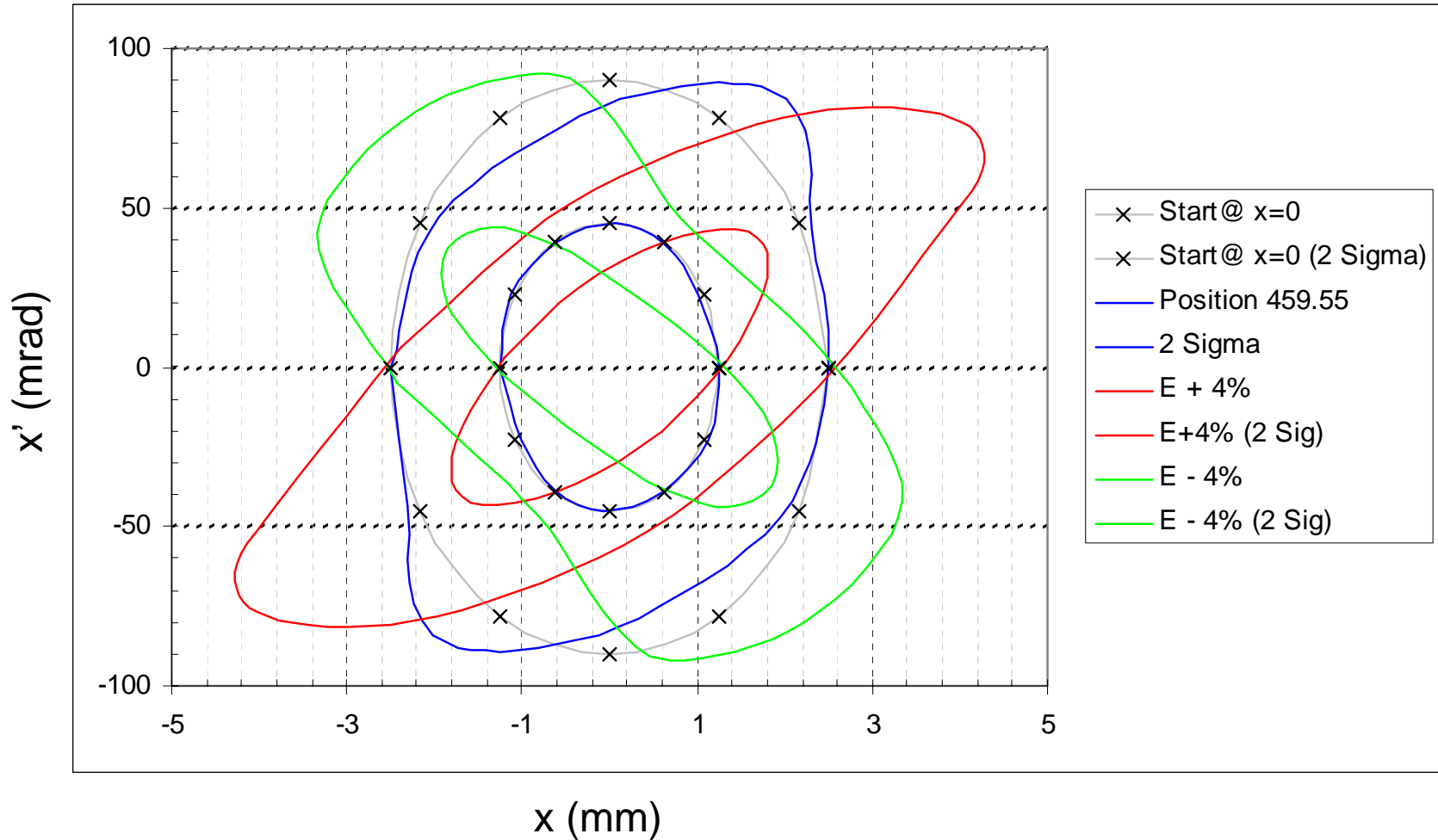
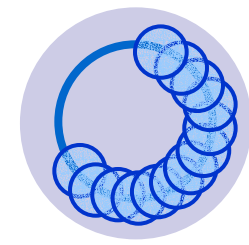
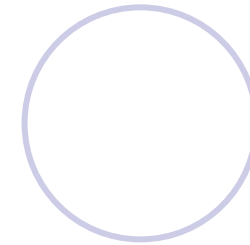
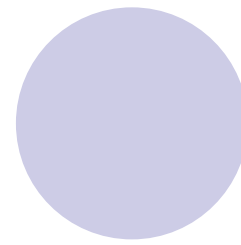
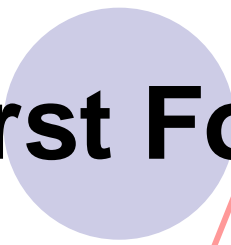


space for kicker to deflect the beam upstairs

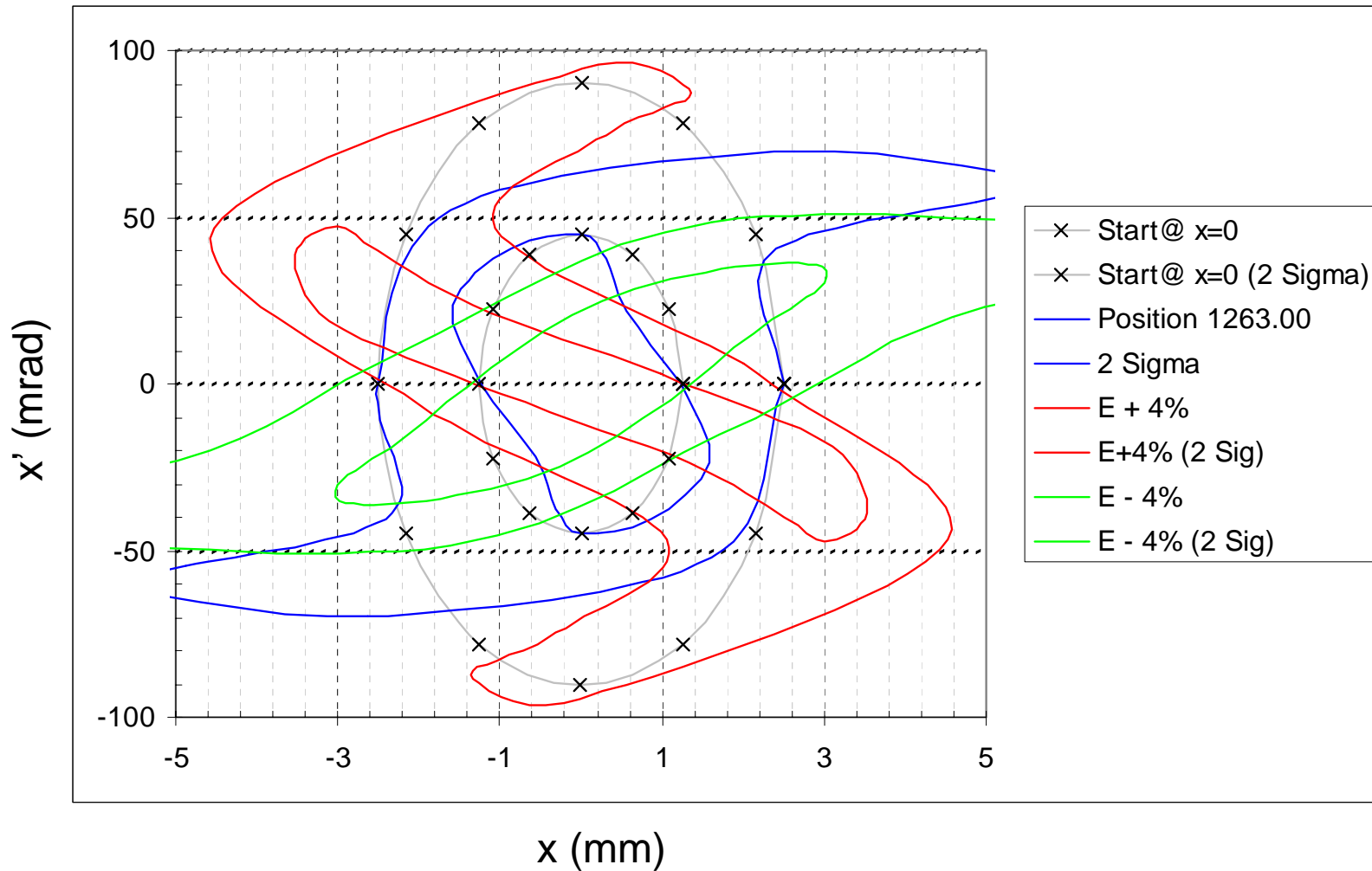
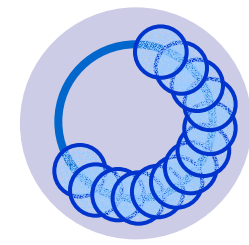
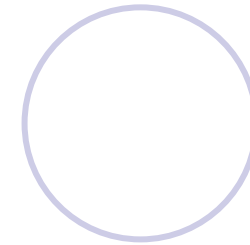
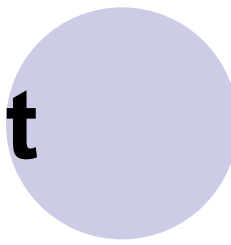
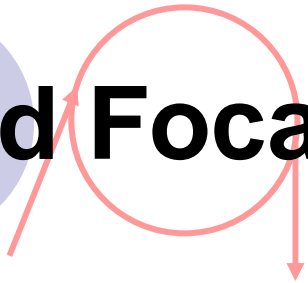
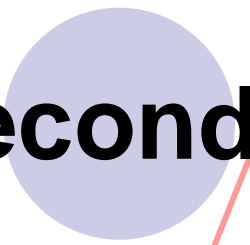
1 m

focal points for diagnostics and differential pumping

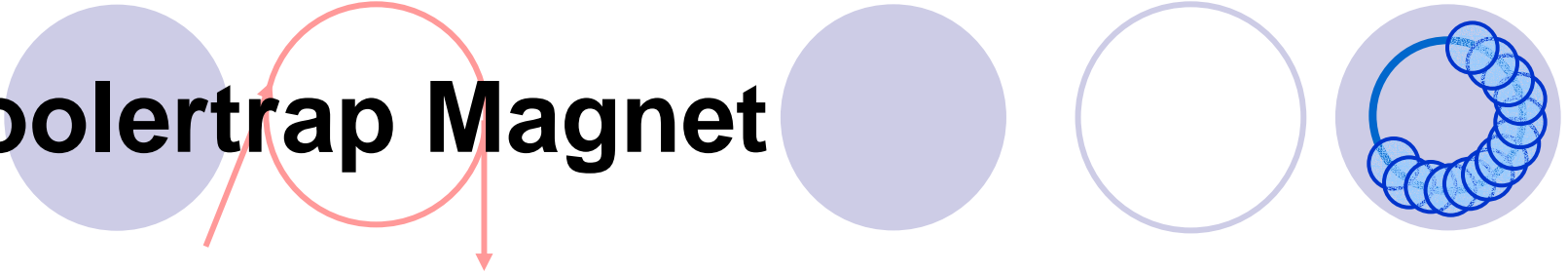
First Focal Point



Second Focal Point

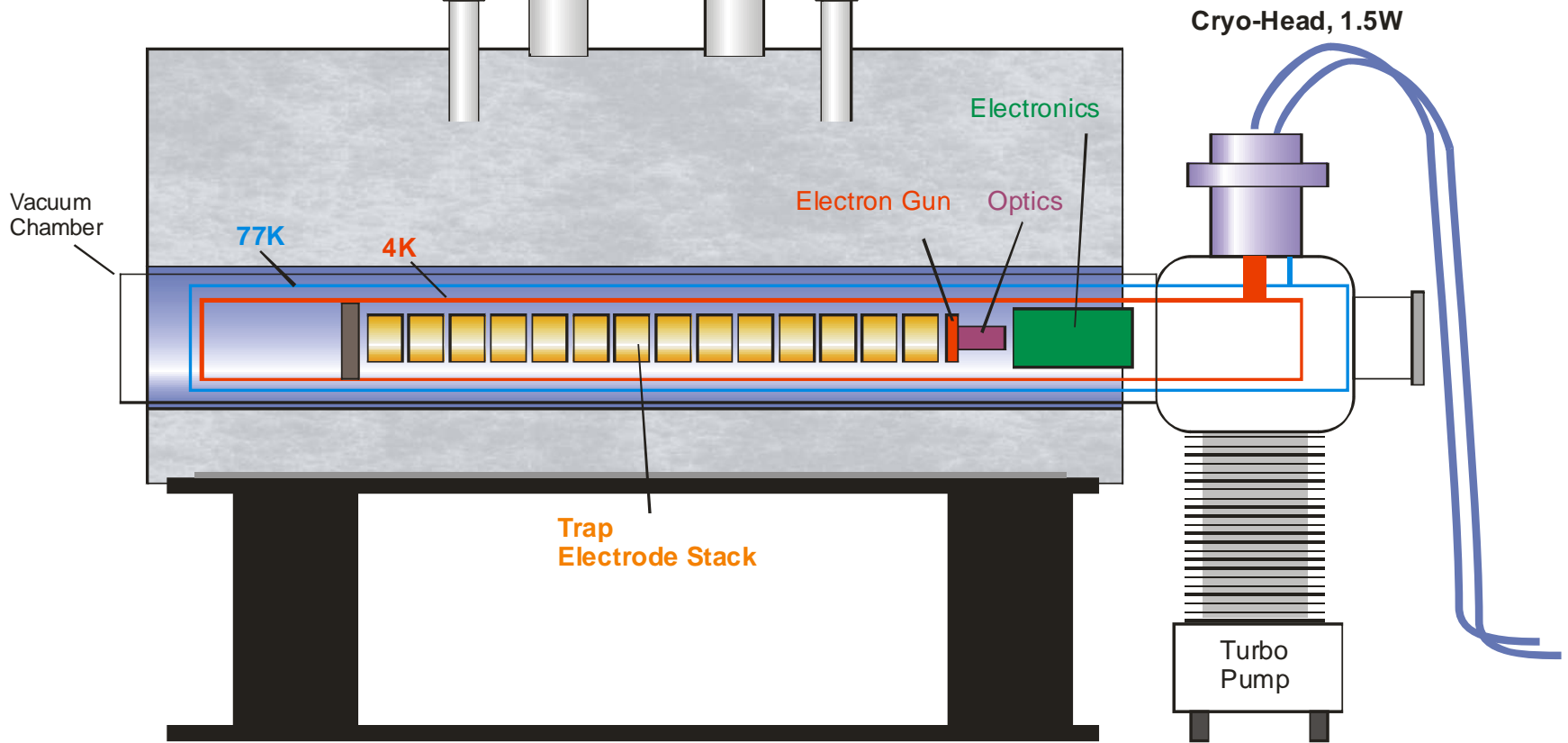


Coolertrap Magnet

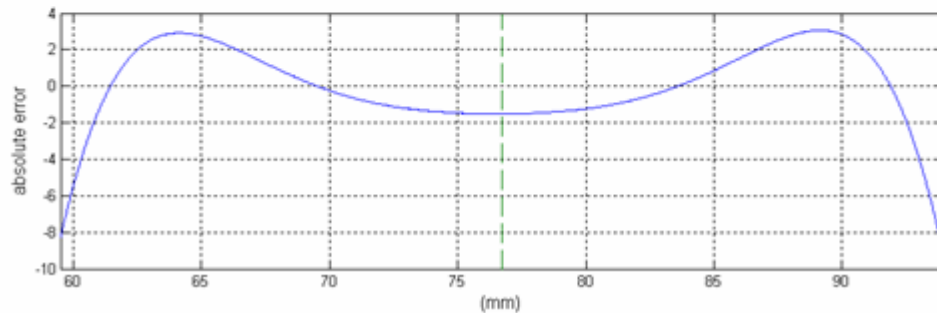
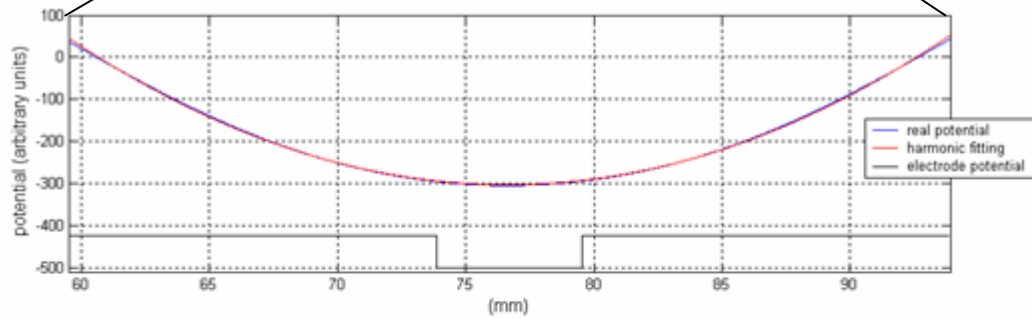
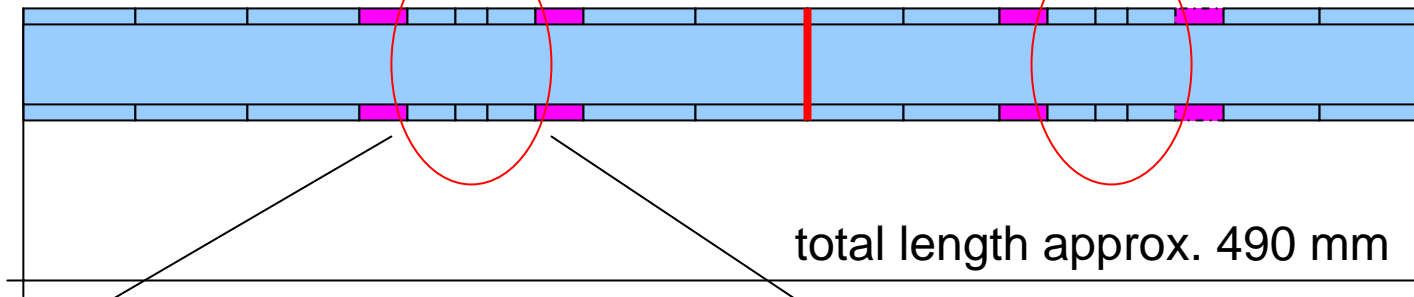
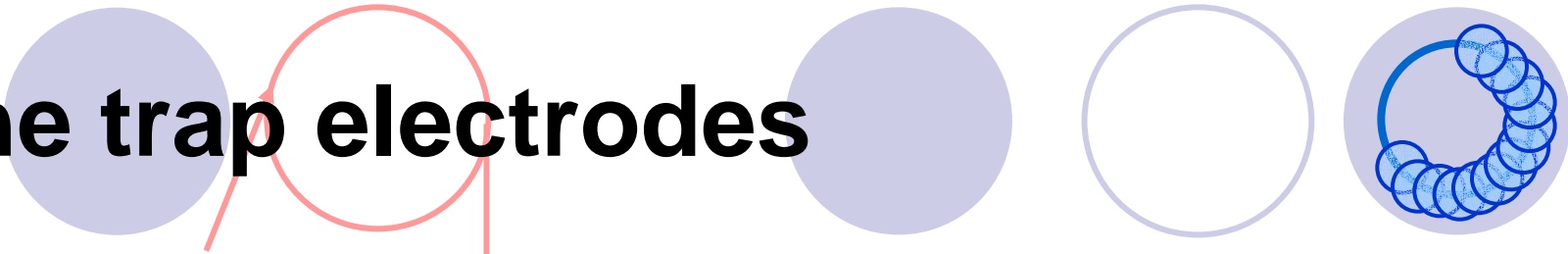


- Calc. done for 5T, $\pm 4\%$ ΔE , 11 kV retardation
 - we get an energy spread of $\pm 20\%$
- homogeneous part:
 - ~ 400 mm long (initial pulse 0.9 μs long)
 - need to switch within 400 ns: 11 kV \rightarrow 12.6 kV
 - inner diameter needed: > 10 mm

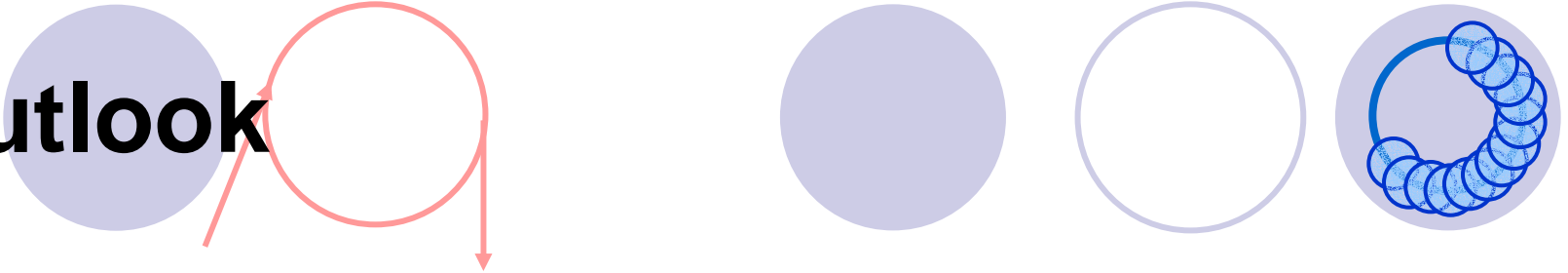
A cryogenic Trap



The trap electrodes



Outlook



- calls for tender to be placed for the magnet and the main decelerator elements
- continue detailed simulations
- construction starts 2005