OCTAGONAL RING COOLER – BUNCH COMPRESSOR

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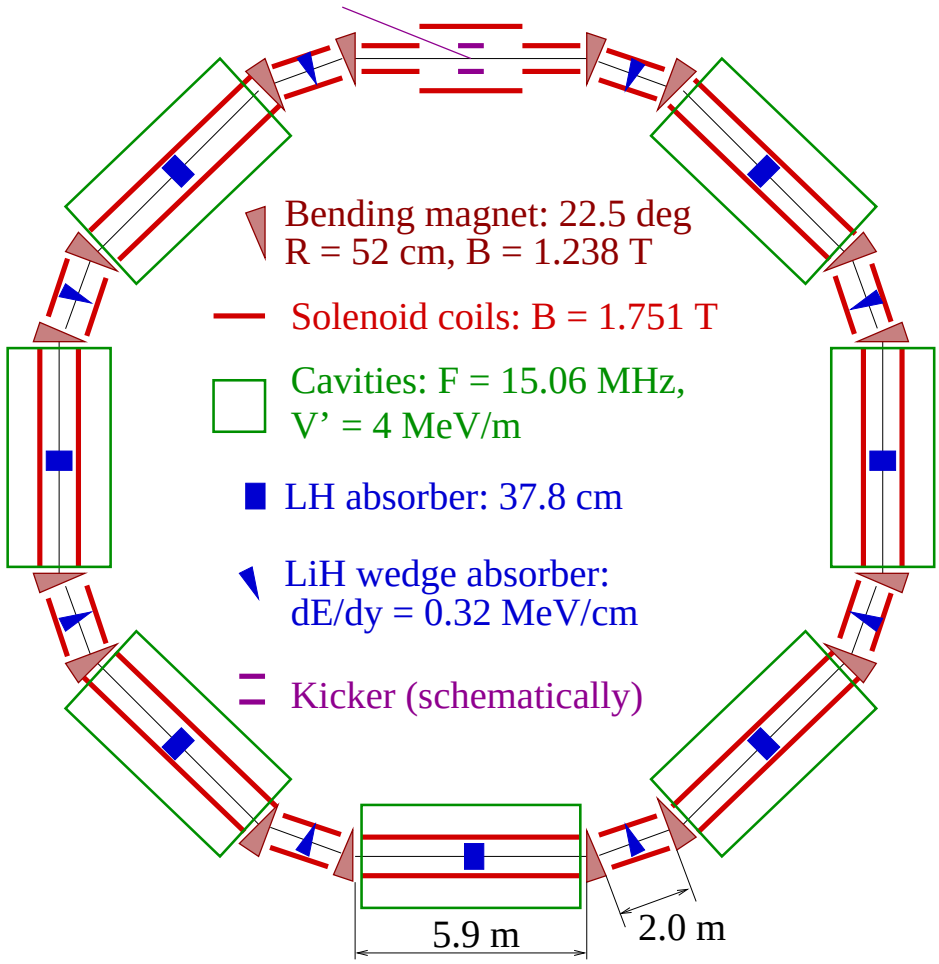
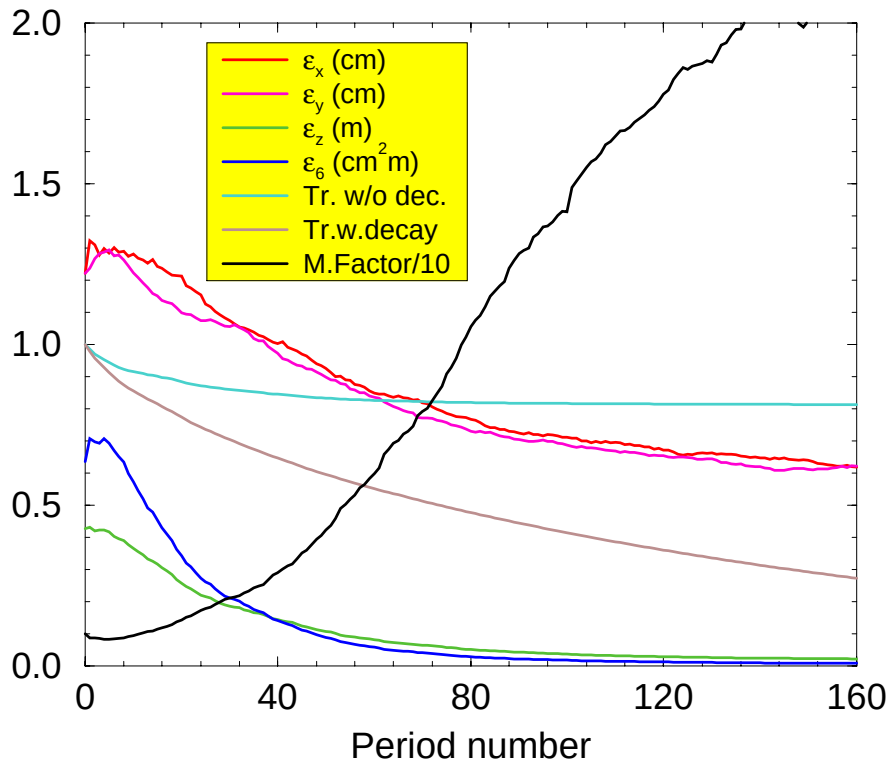
Layout



Layout of the ring cooler – bunch compressor.

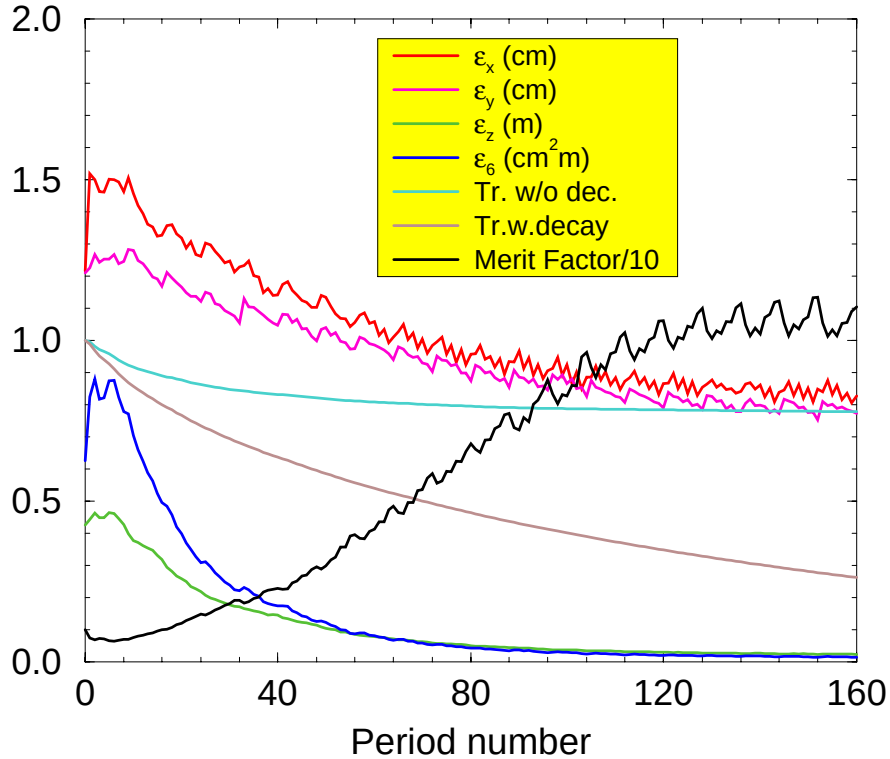
Simulation: Symmetric RF



Injected beam:
Transverse emittance 1.22 cm
Longitudinal emittance 42.7 cm
6D emittance 63.4 cm^3.

The beam after 20 turns:
Transverse emittance 0.62 cm
Longitudinal emittance 2.2 cm
6D emittance 0.86 cm^3
Transmission without decay 81.3%
Transmission with decay 27.3%
Merit factor 20.3

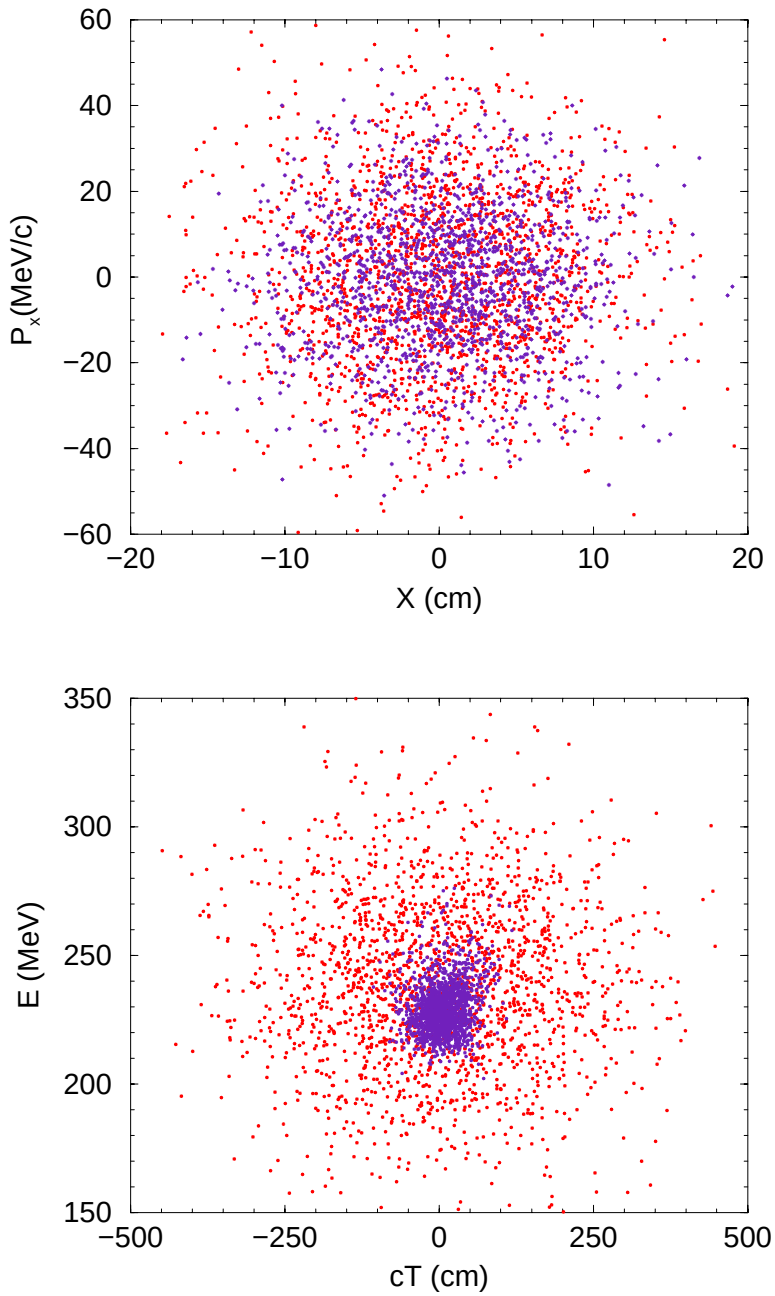
Simulation: 1st period w/o RF



Injected beam:
Transverse emittance 1.21 cm
Longitudinal emittance 42.6 cm
6D emittance 62.6 cm^3.

The beam after 20 turns:
Transverse emittance 0.80 cm
Longitudinal emittance 2.3 cm
6D emittance 1.49 cm^3
Transmission without decay 77.8%
Transmission with decay 26.3%
Merit factor 11.0

Phase space



Phase space: injection – red, after 20 turns – blue.
Top – transverse, bottom – longitudinal.