



Nuclear Physics and Astrophysics

SPA6309

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Lecture 21 – Accelerators

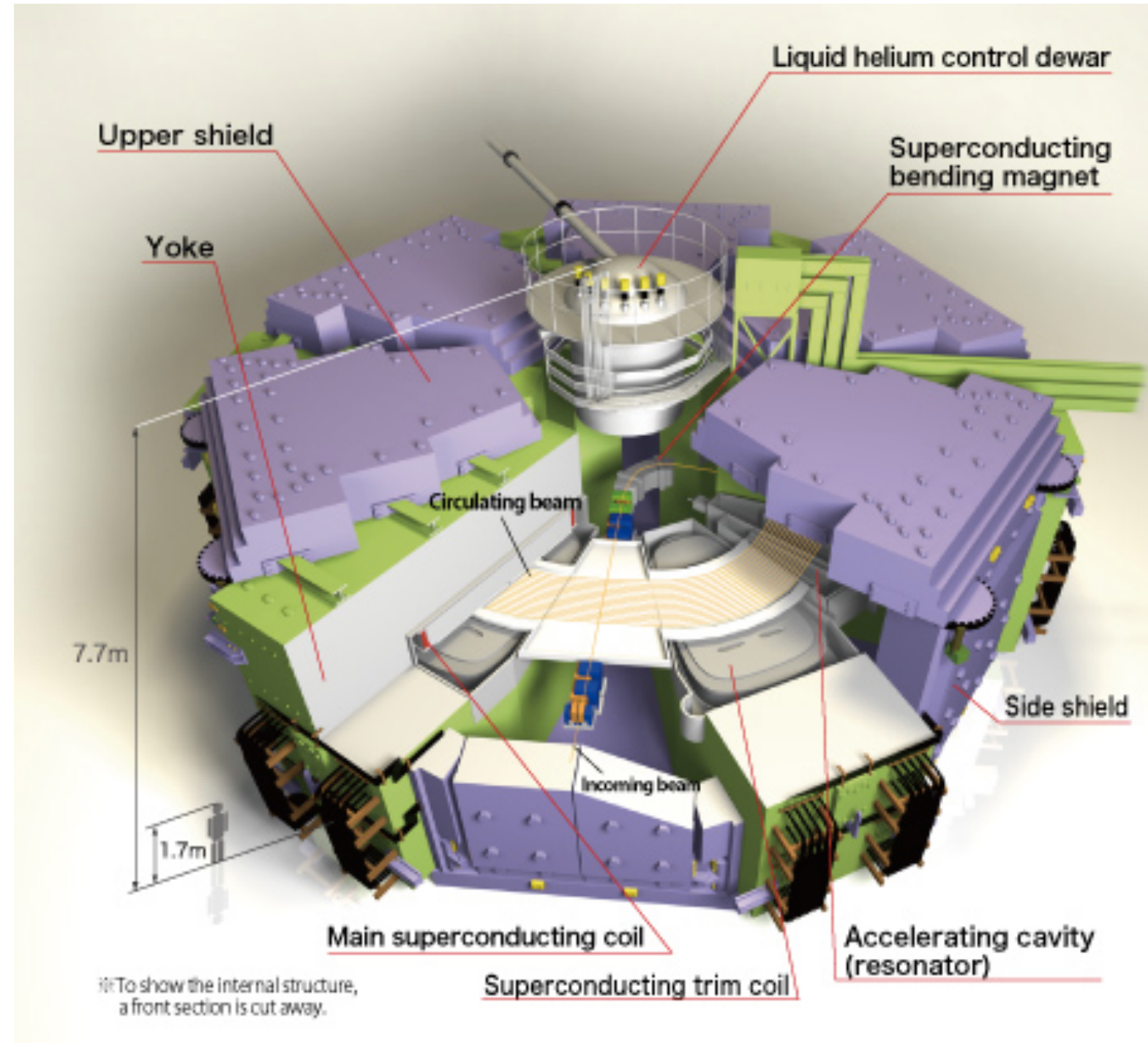


SRC

- ion accelerator
- 350-400 MeV per nucleon

Cyclotron is in general not high energy machine, but high intensity (high current)

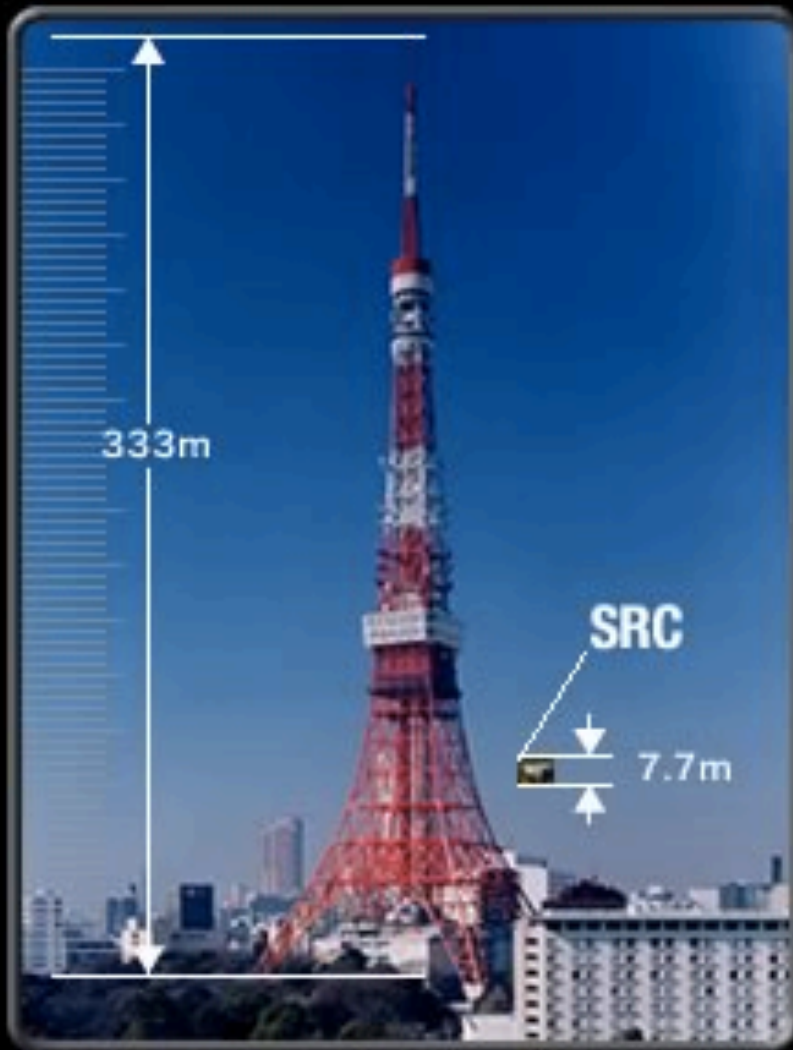
- medical application
- isotope production etc





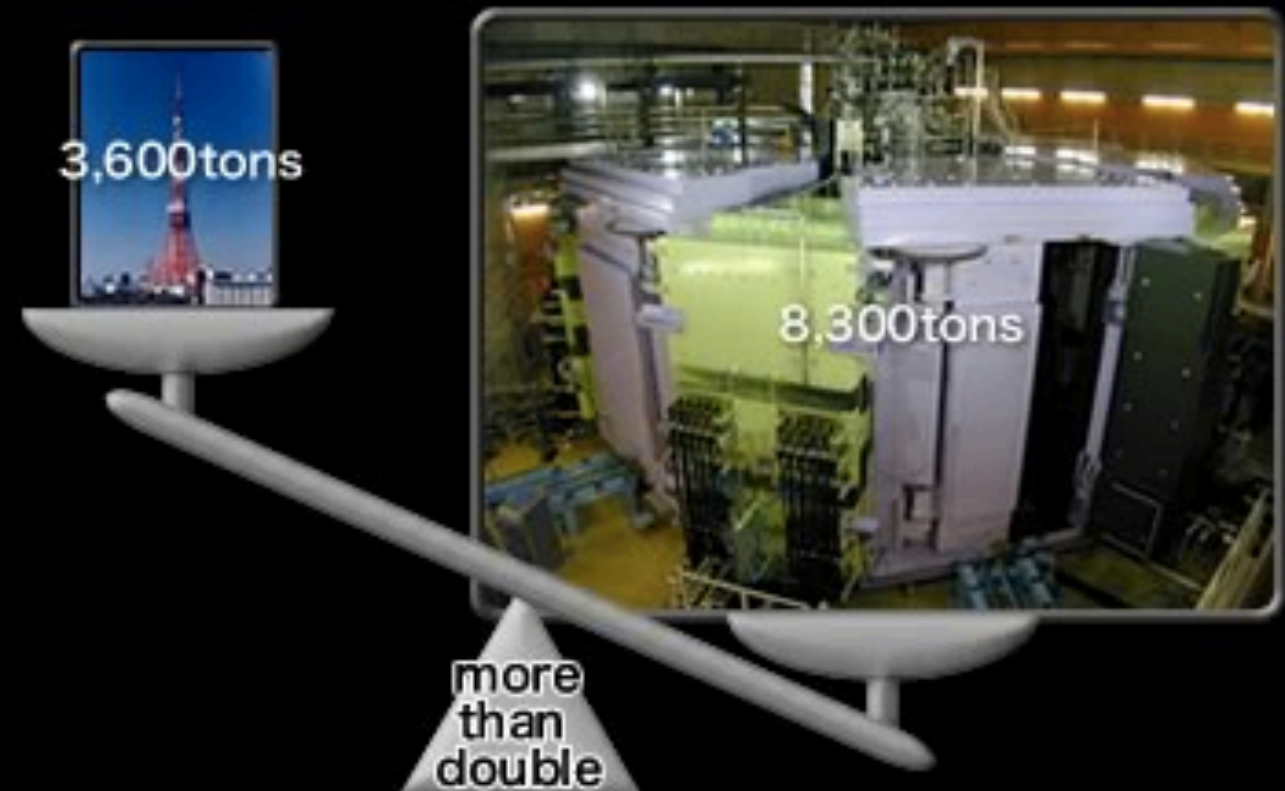
The SRC weighs twice as much as the Tokyo Tower!

■ Comparison of the size



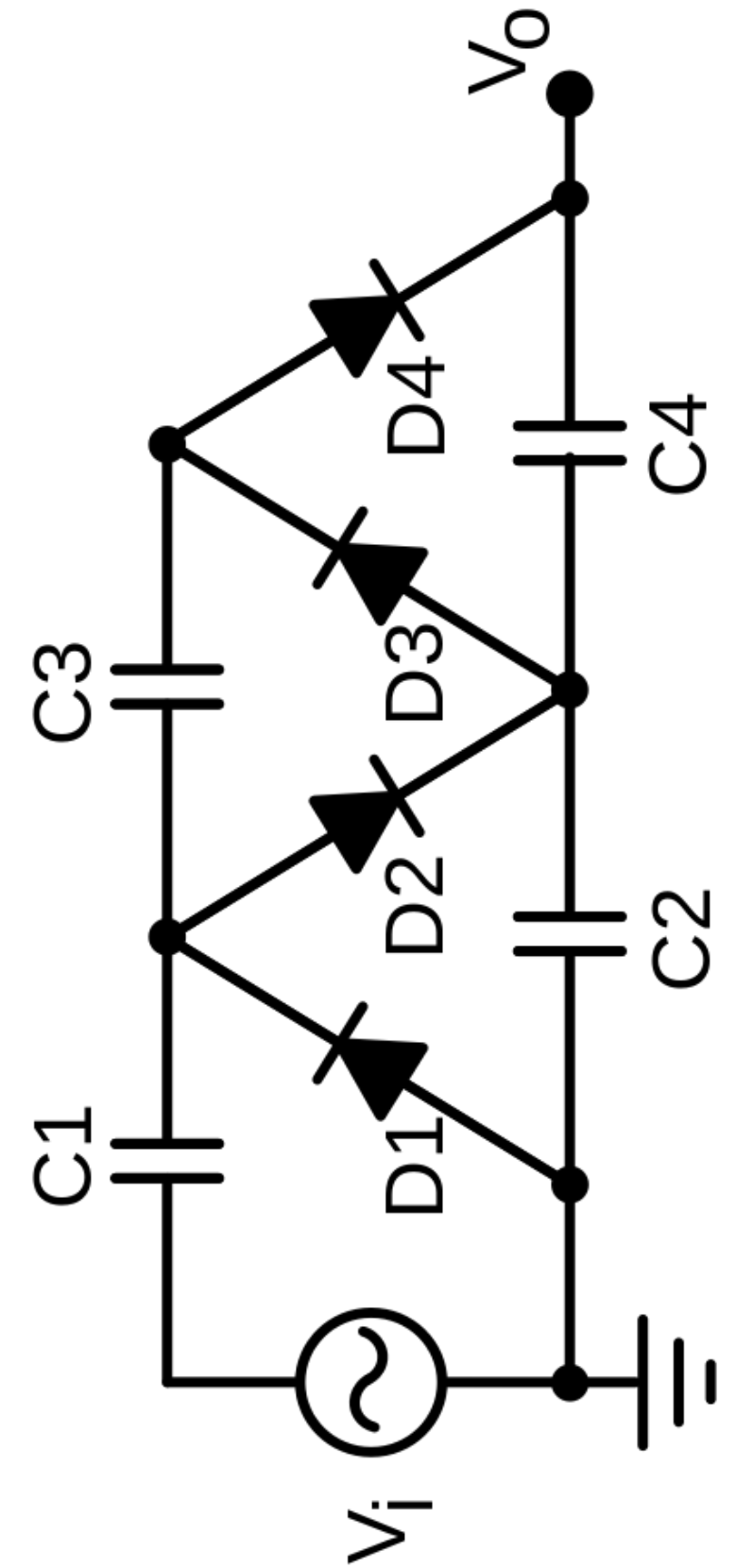
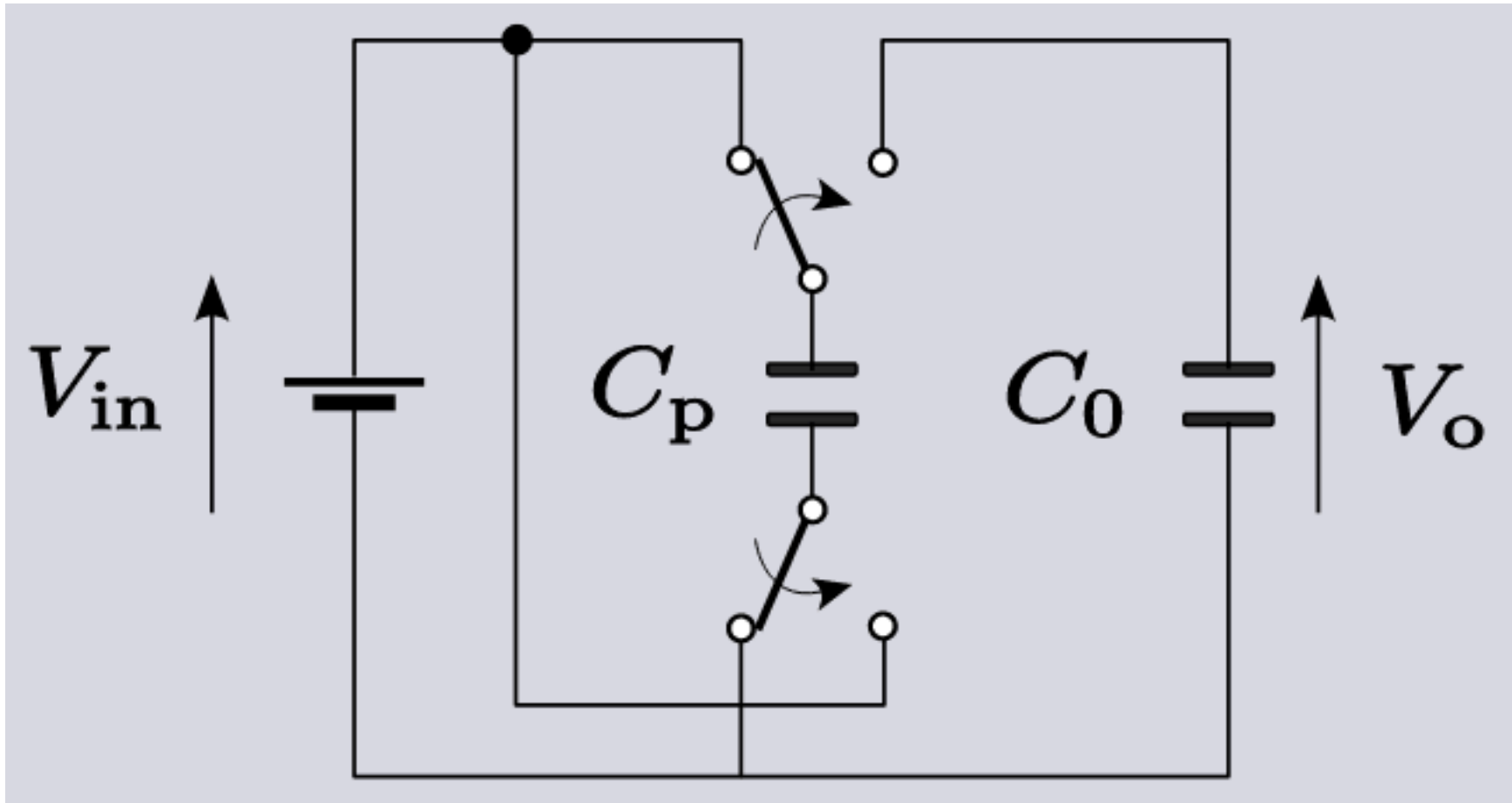
■ Height
Tokyo Tower = SRC x 43

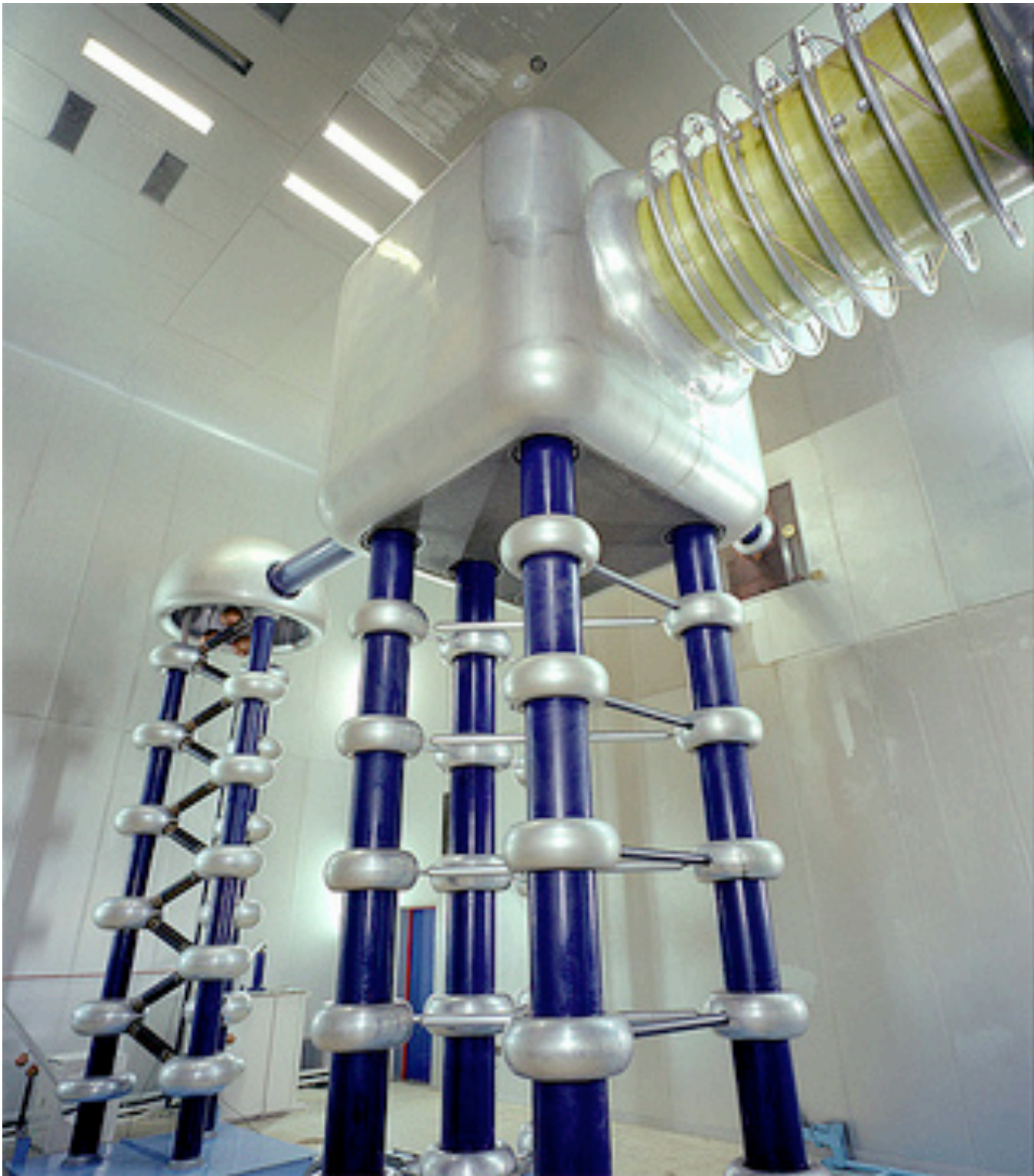
■ Comparison of the weight



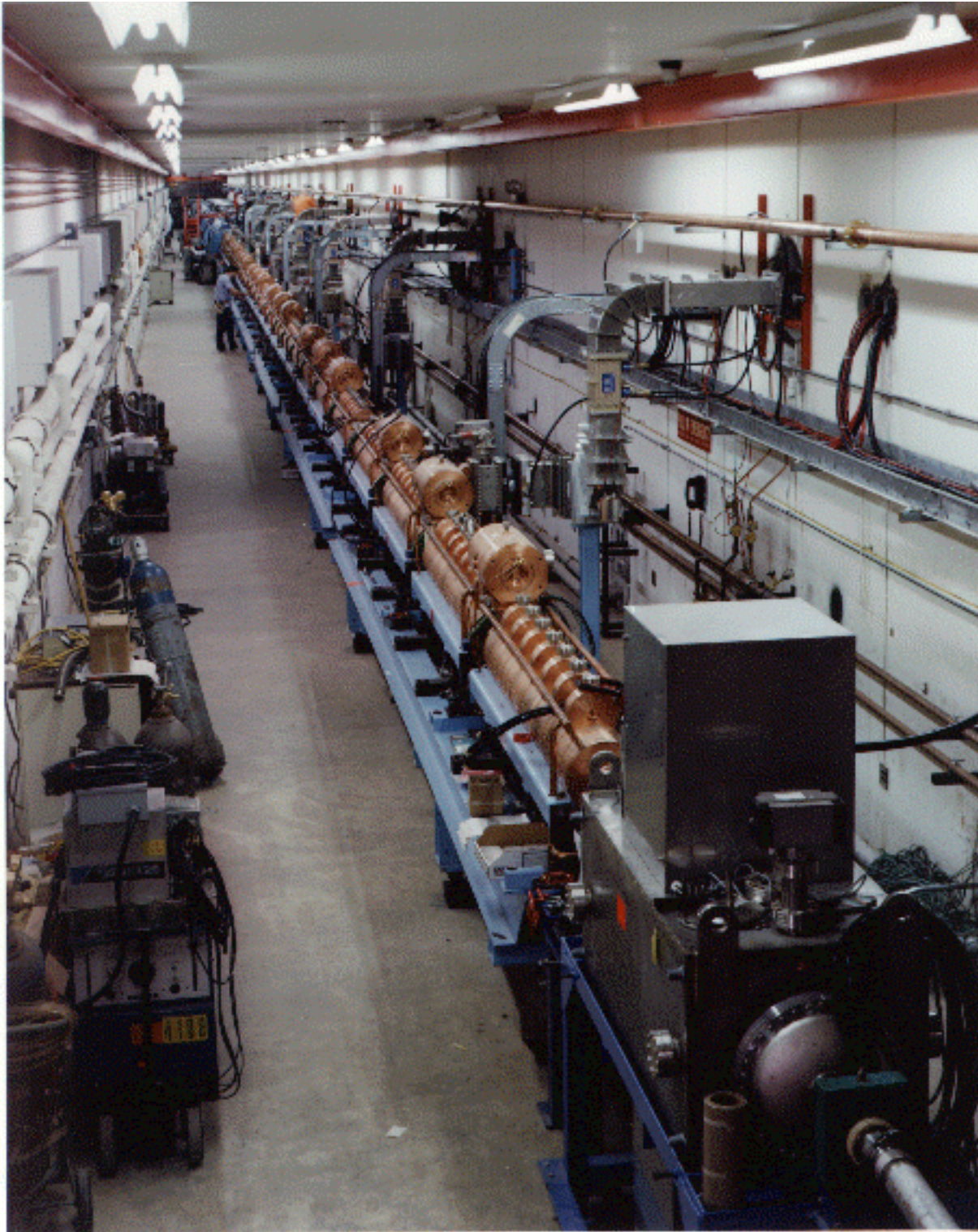
■ Weight
Tokyo Tower x 2 = SRC

SRC weights twice as much as the Tokyo Tower





Fermilab Cockcroft-Walton generator

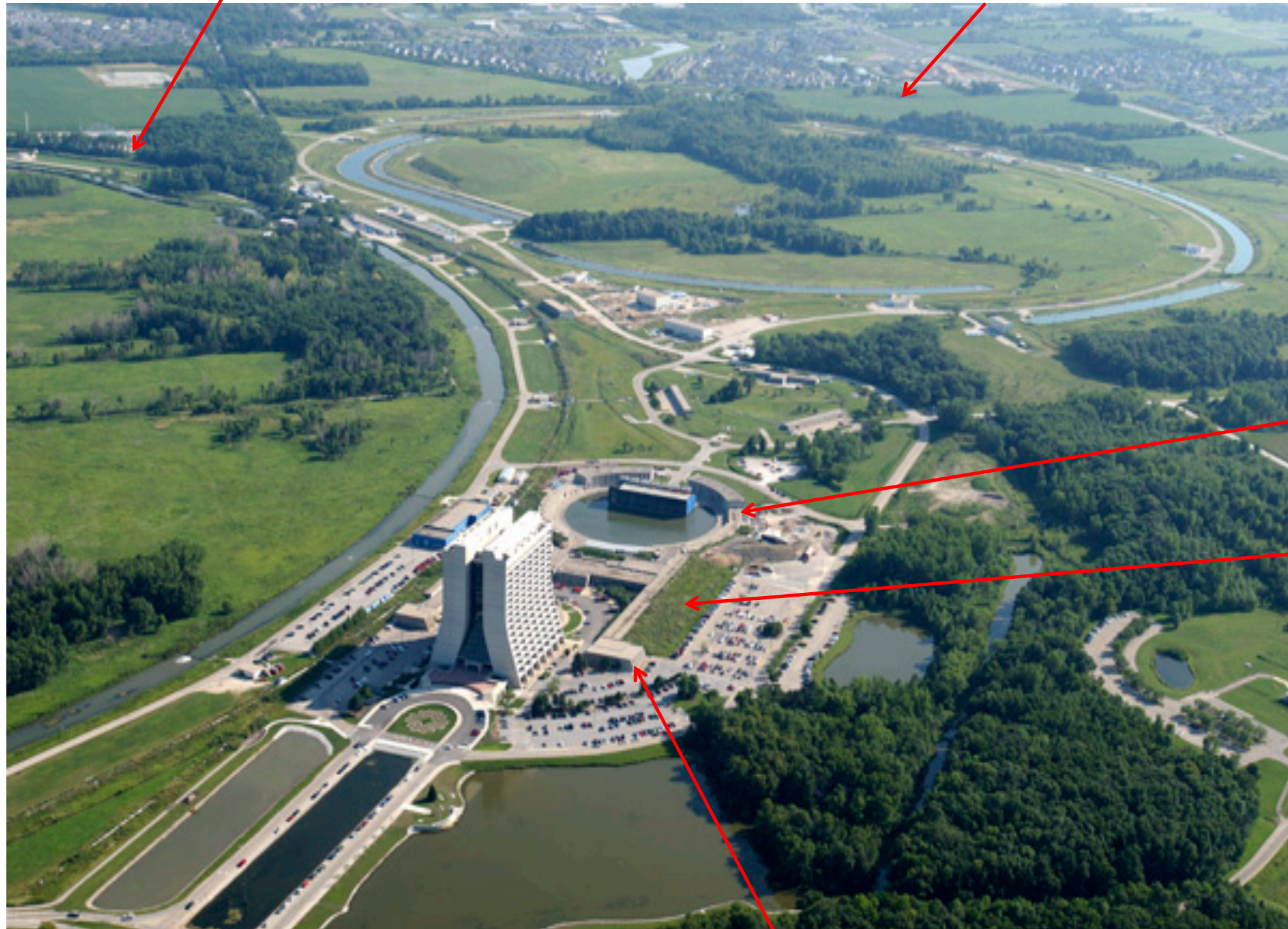


Fermilab LINAC



Tevatron (1 TeV)

Main Injector (120 GeV)

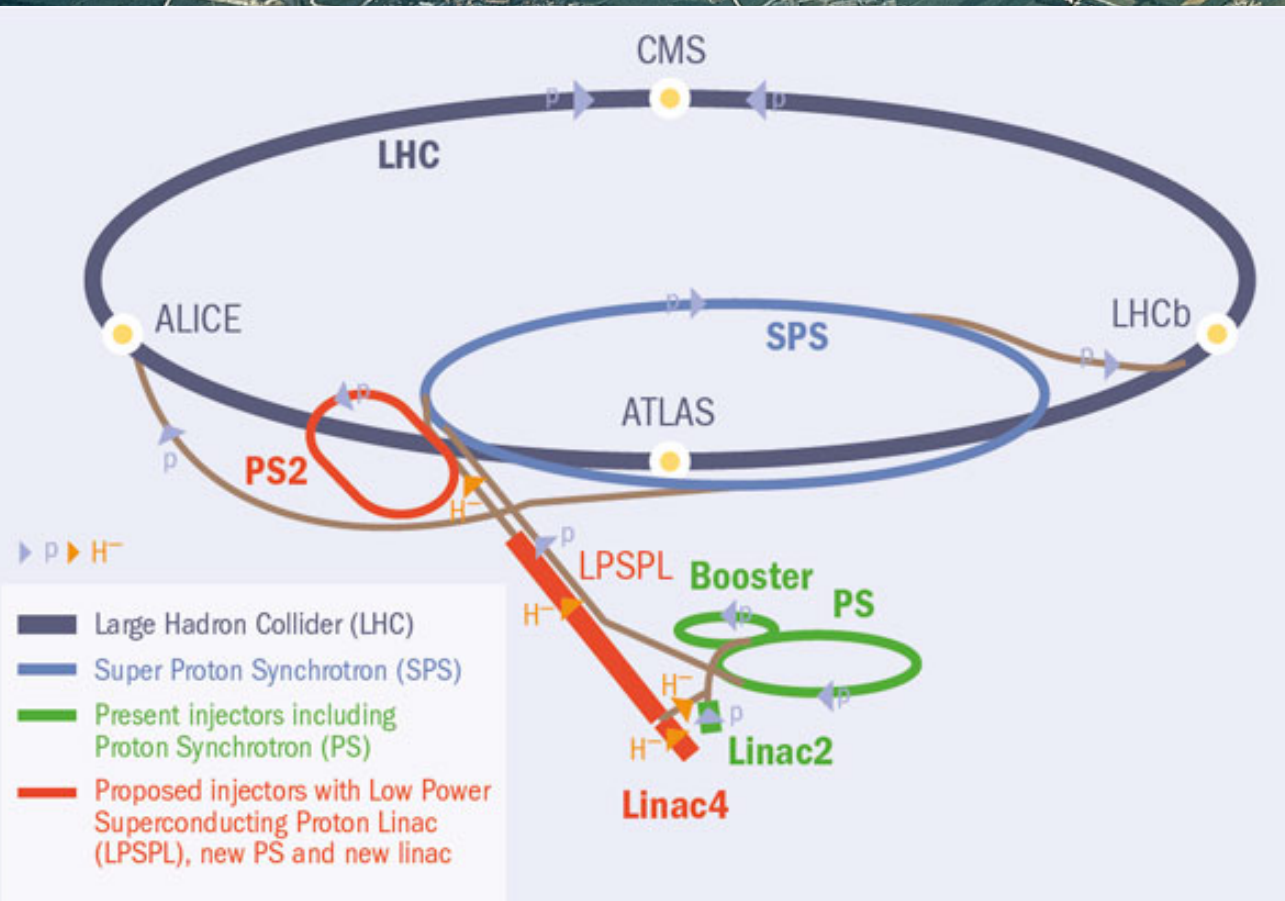


Booster
(8 GeV)

LINAC
(400 MeV)

Cockcroft-Walton (750 keV)

Large Hadron Collider, CERN, Switzerland



Very common type of accelerators (~60 in the world)

- industrial application
 - medical application
 - archeology
 - Crime Scene Investigation (real CSI !)
- etc



