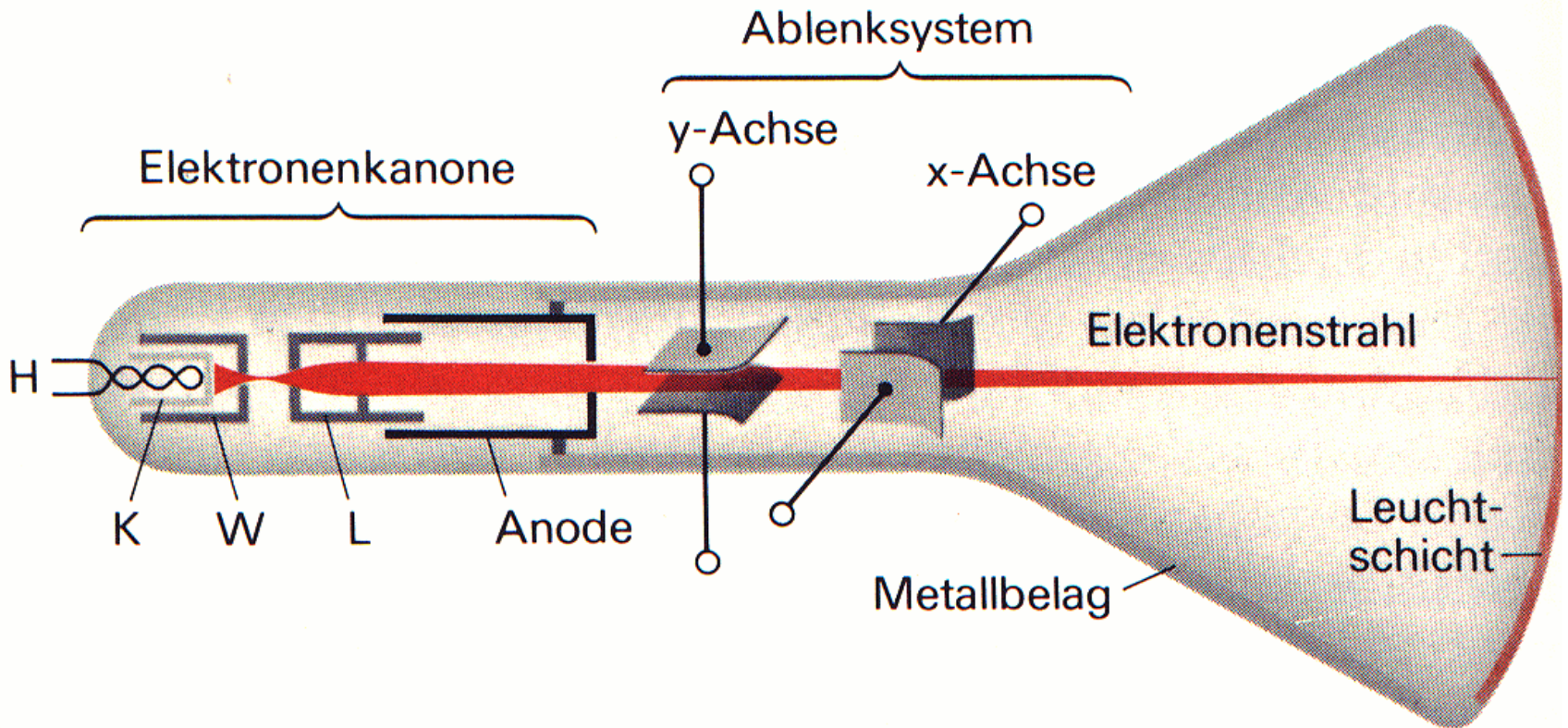


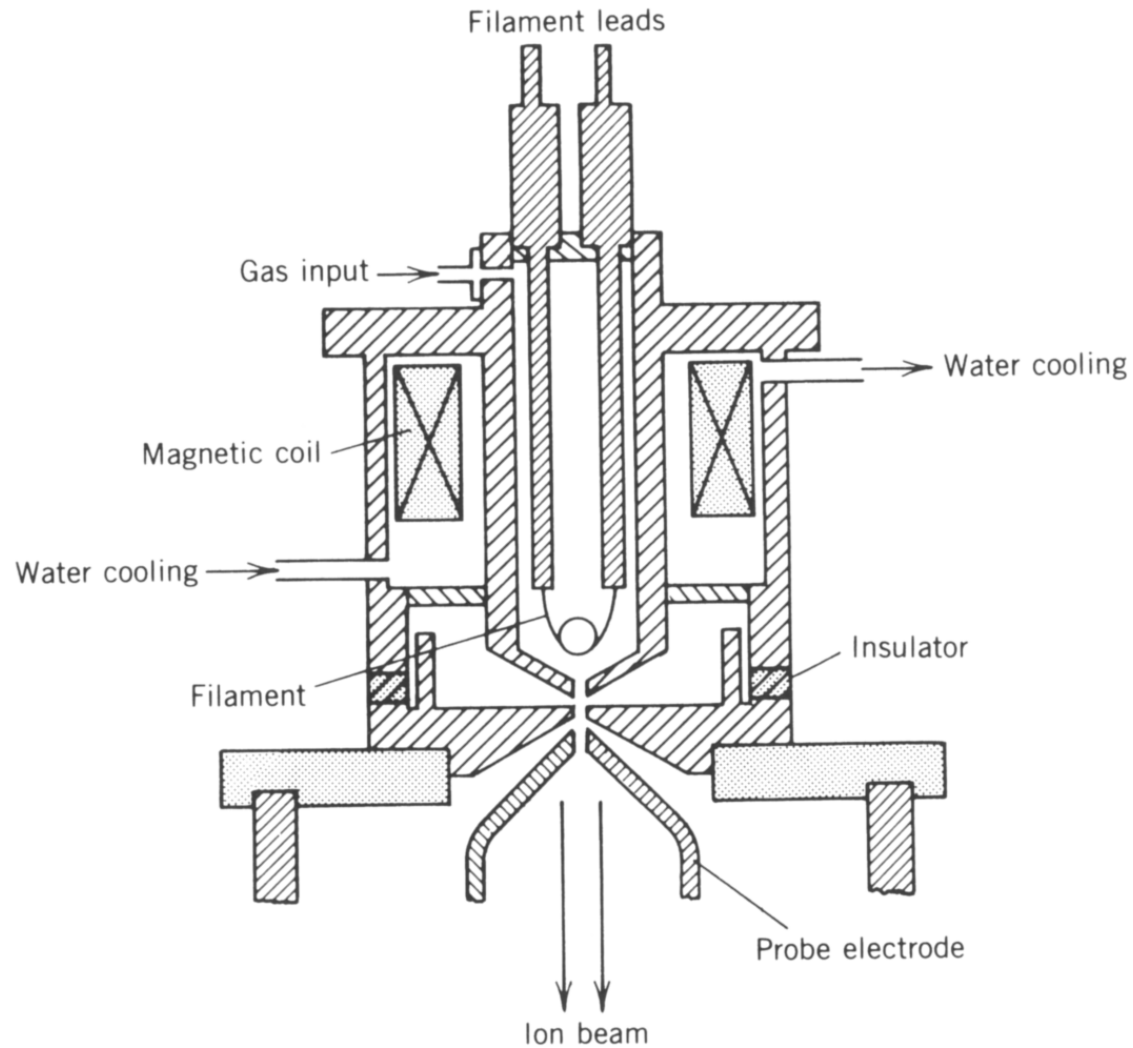


Teilchenbeschleuniger

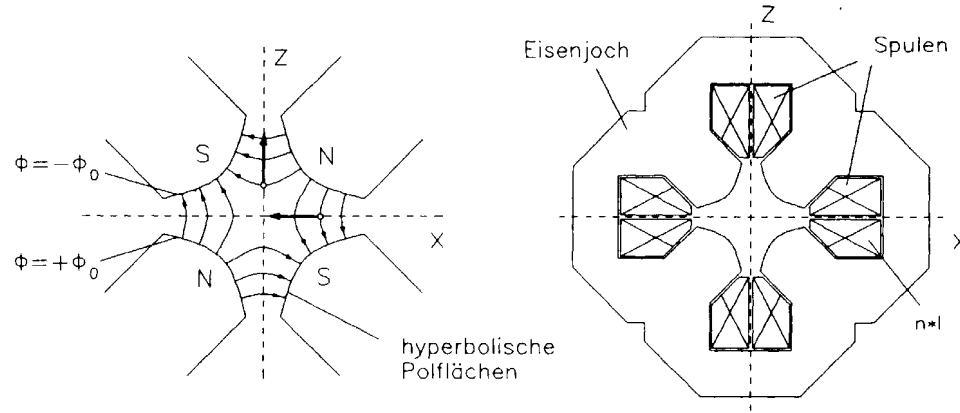
Fernseher / Oszilloskop



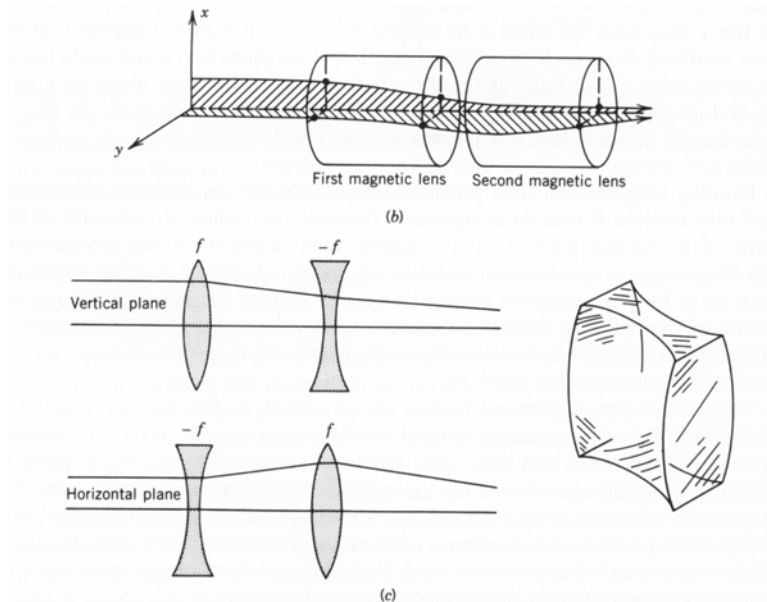
Ionenquelle



Quadrupol Magnet

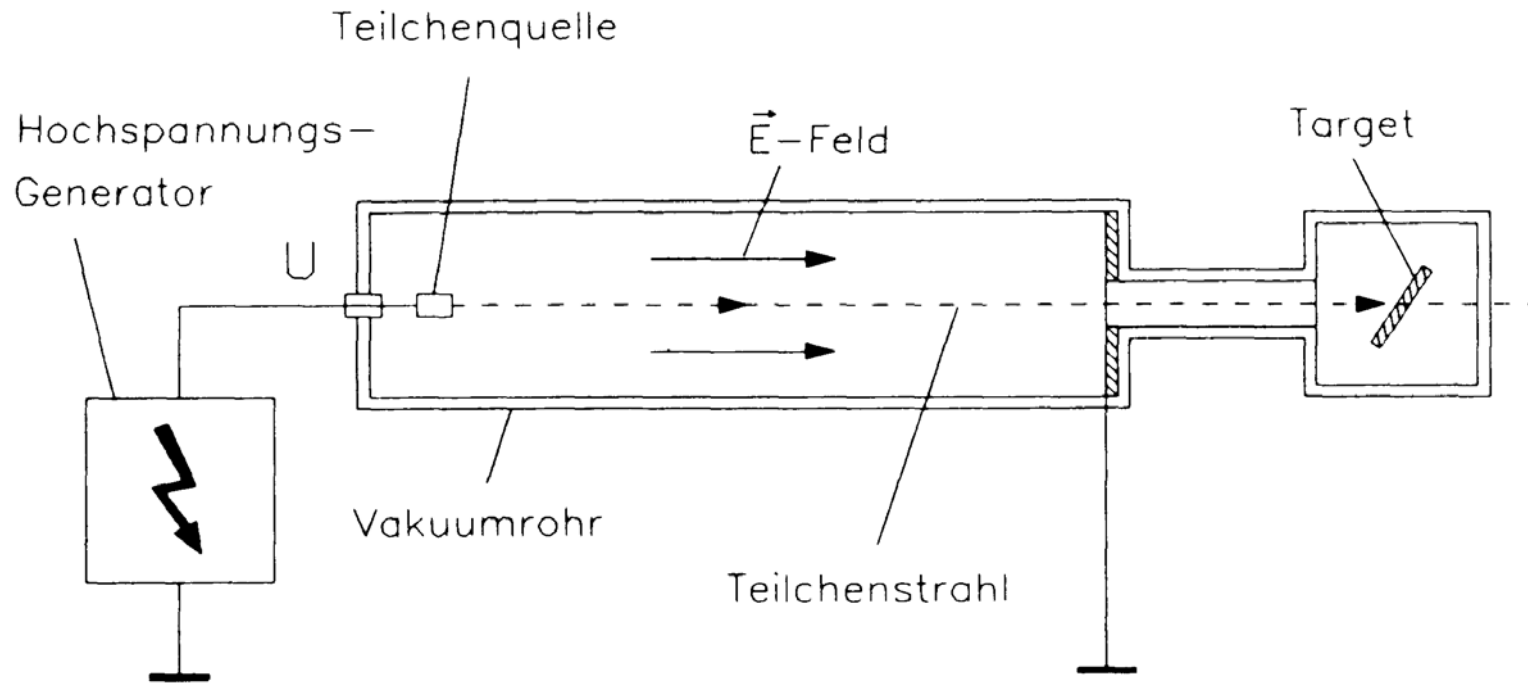


aus Wille

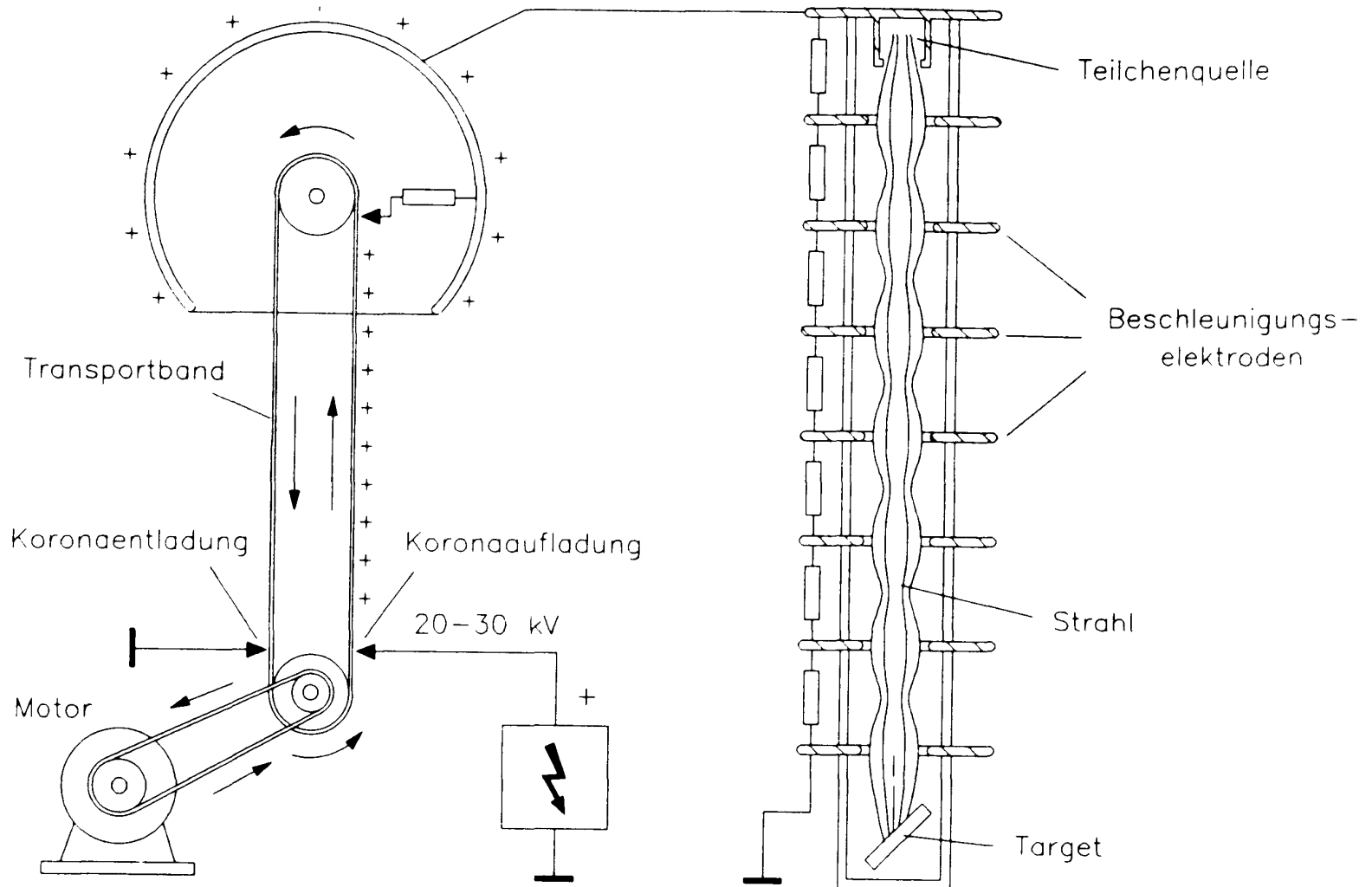


aus Krane

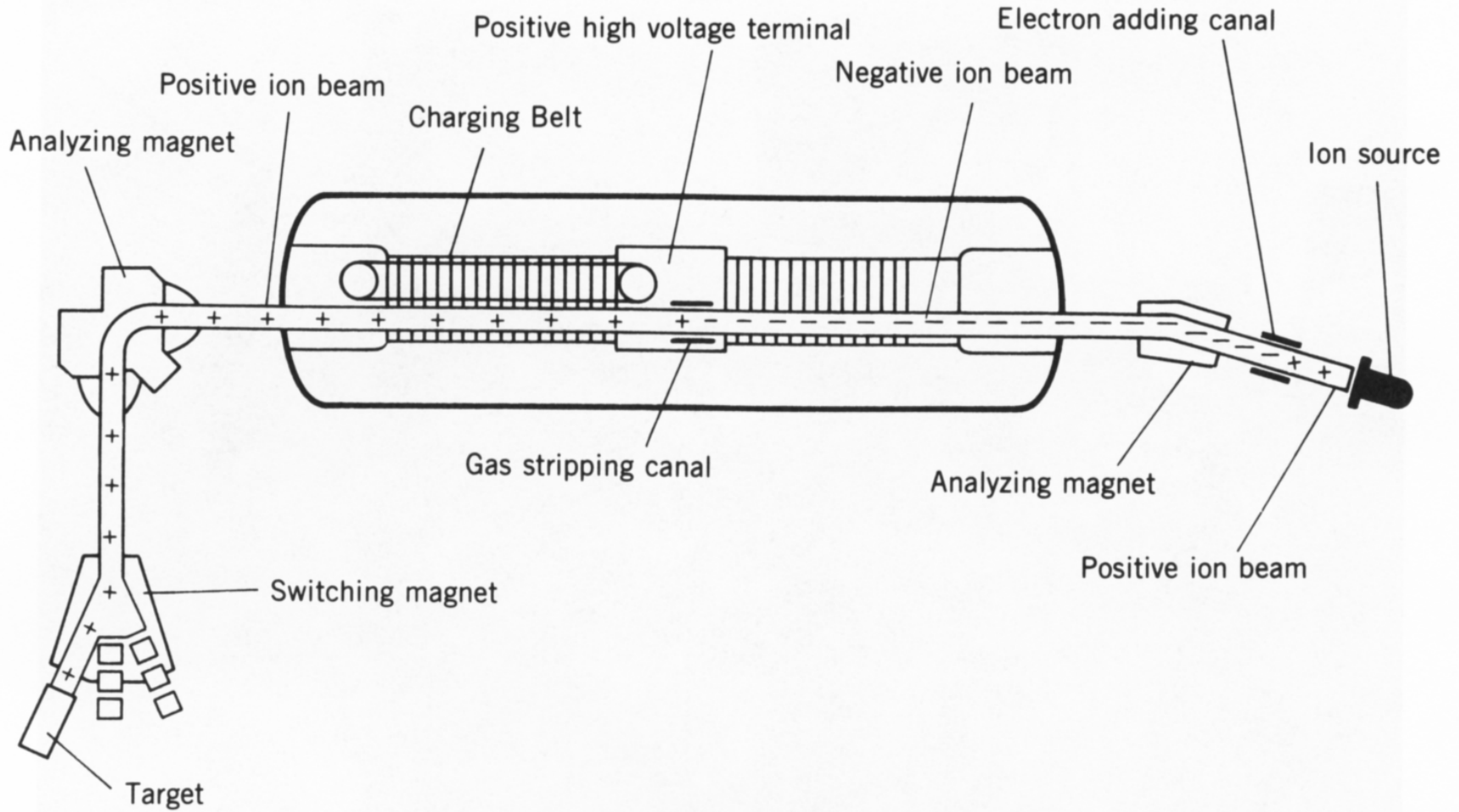
Elektrostatischer Beschleuniger



Van de Graaff Beschleuniger



Tandembeschleuniger



Münchener 15 MV Tandem



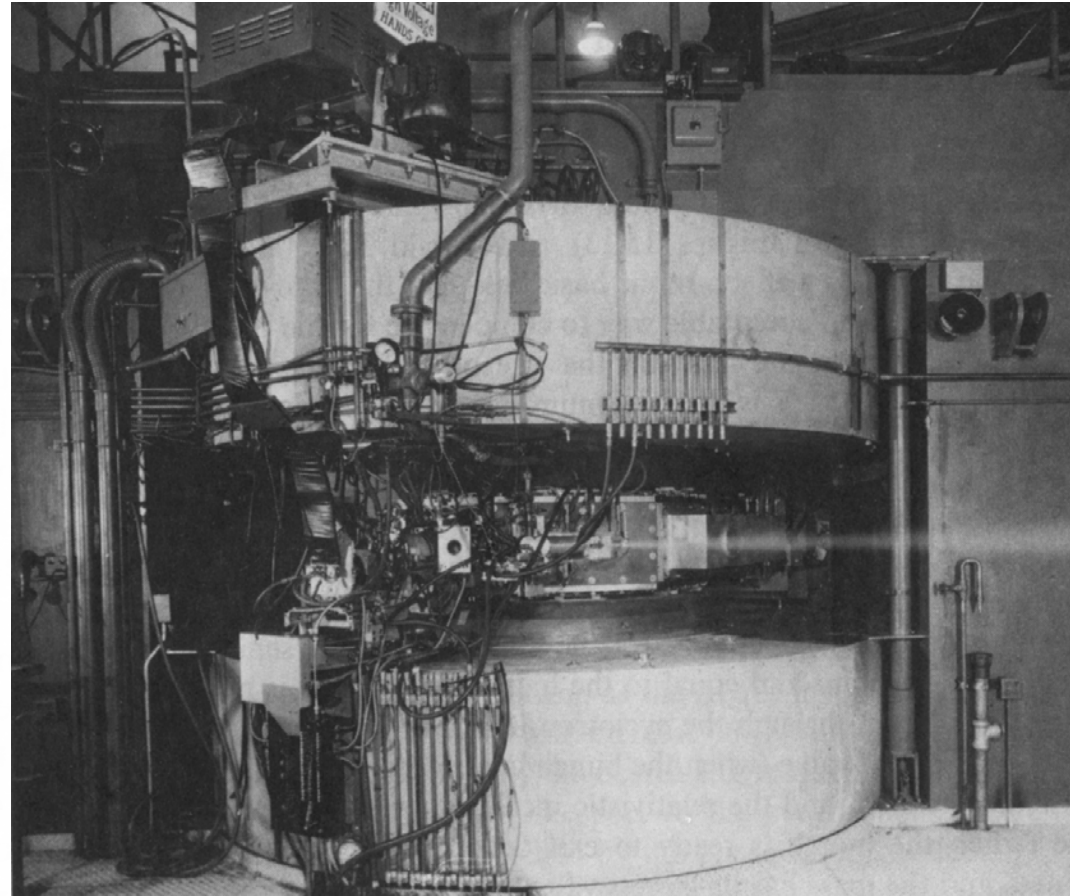
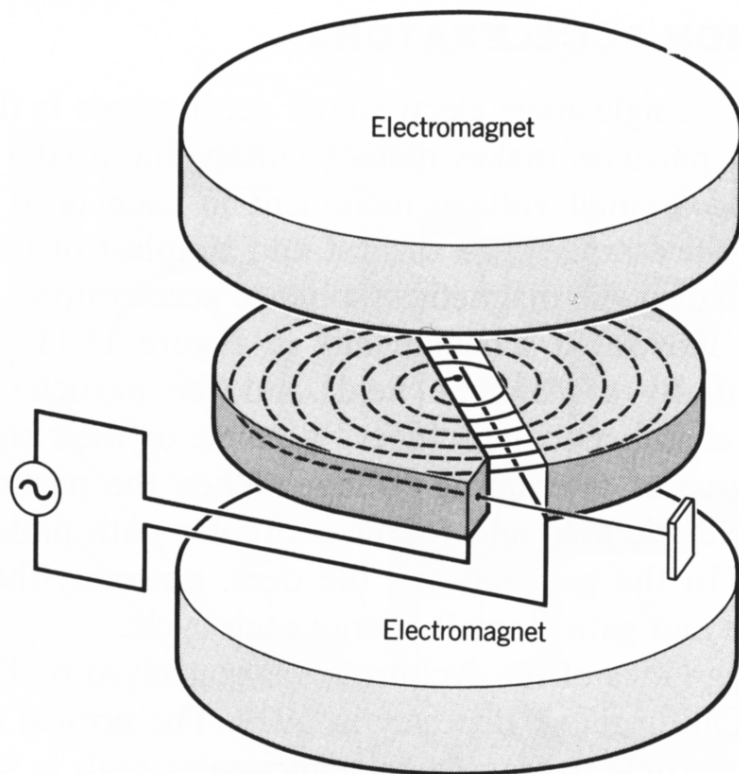
Maier-Leibnitz-Laboratorium für Kern- und Teilchenphysik

der Ludwig-Maximilians-Universität München

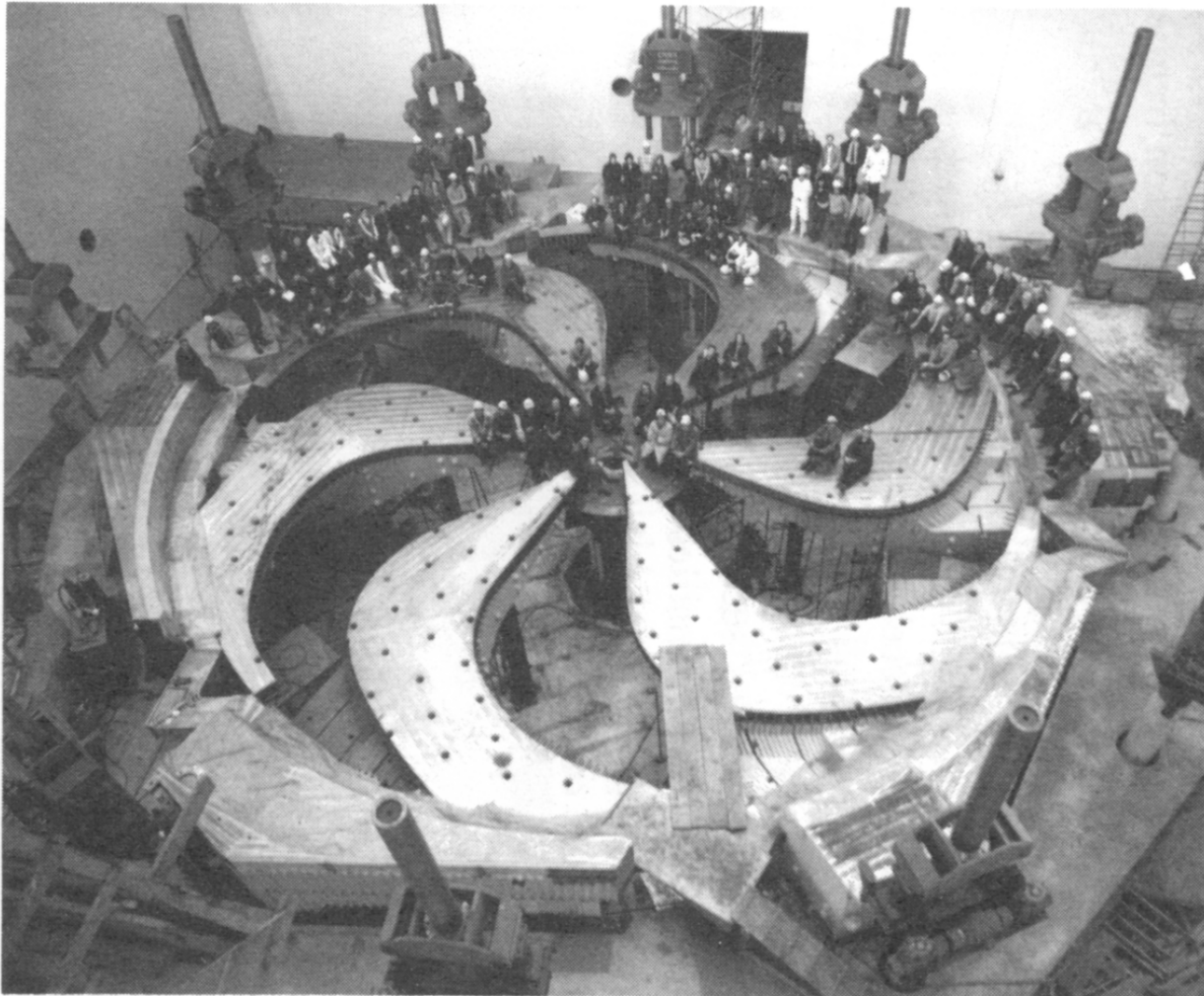
und der Technischen Universität München



Zyklotron 1



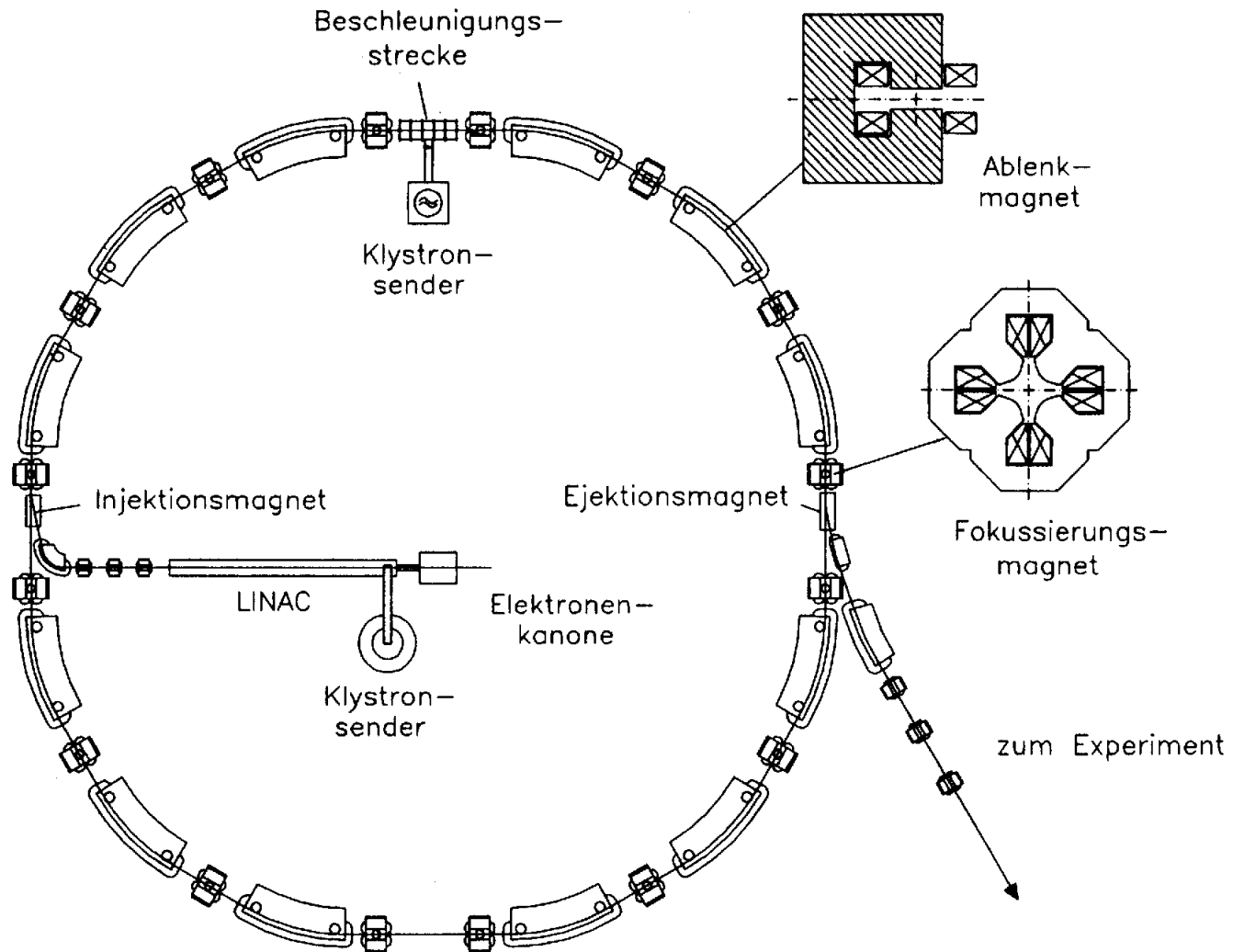
Sektorzyklotron



520 MeV
Protonen

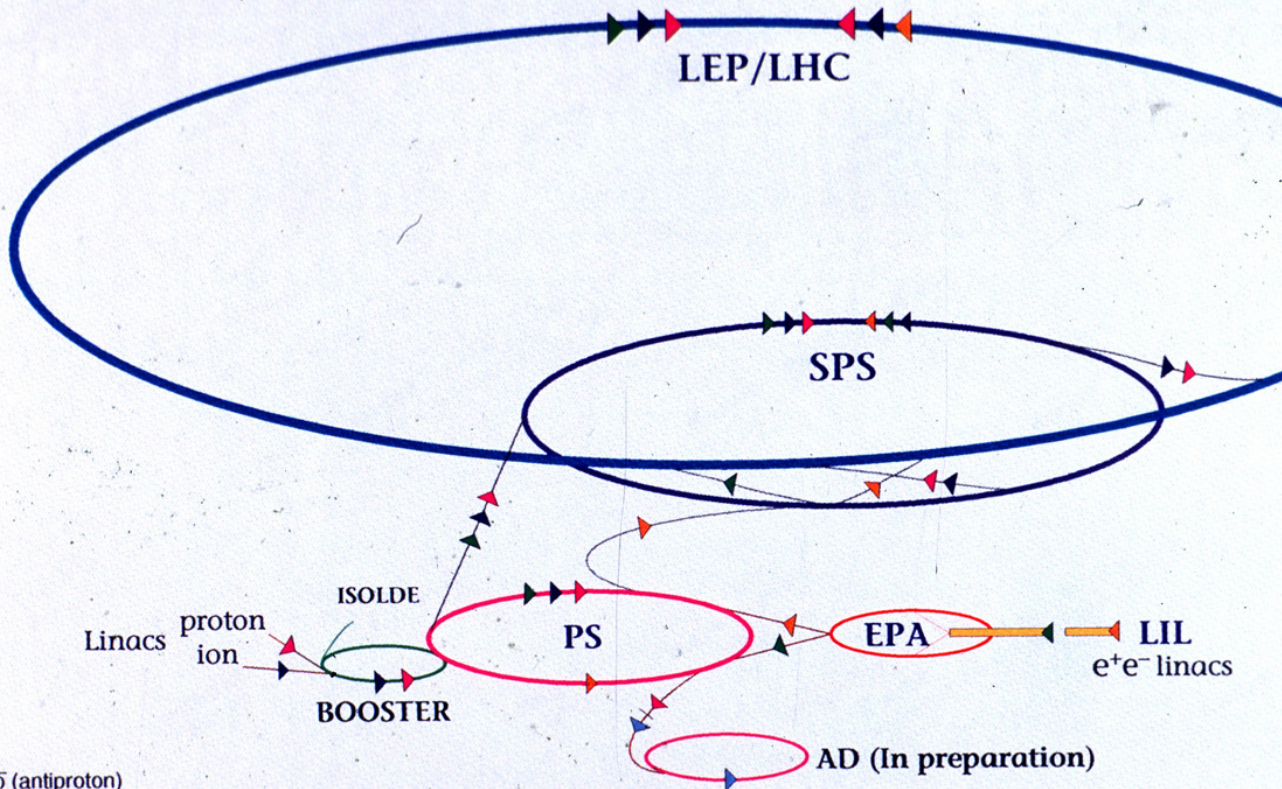
TRIUMF
(Kanada)

Synchrotron



Die CERN Beschleuniger

CERN's Chain of Accelerators



- ▶ \bar{p} (antiproton)
- ▶ p (proton)
- ▶ ion
- ▶ e⁺ (positron)
- ▶ e⁻ (electron)
- ▶ \leftrightarrow proton/antiproton conversion

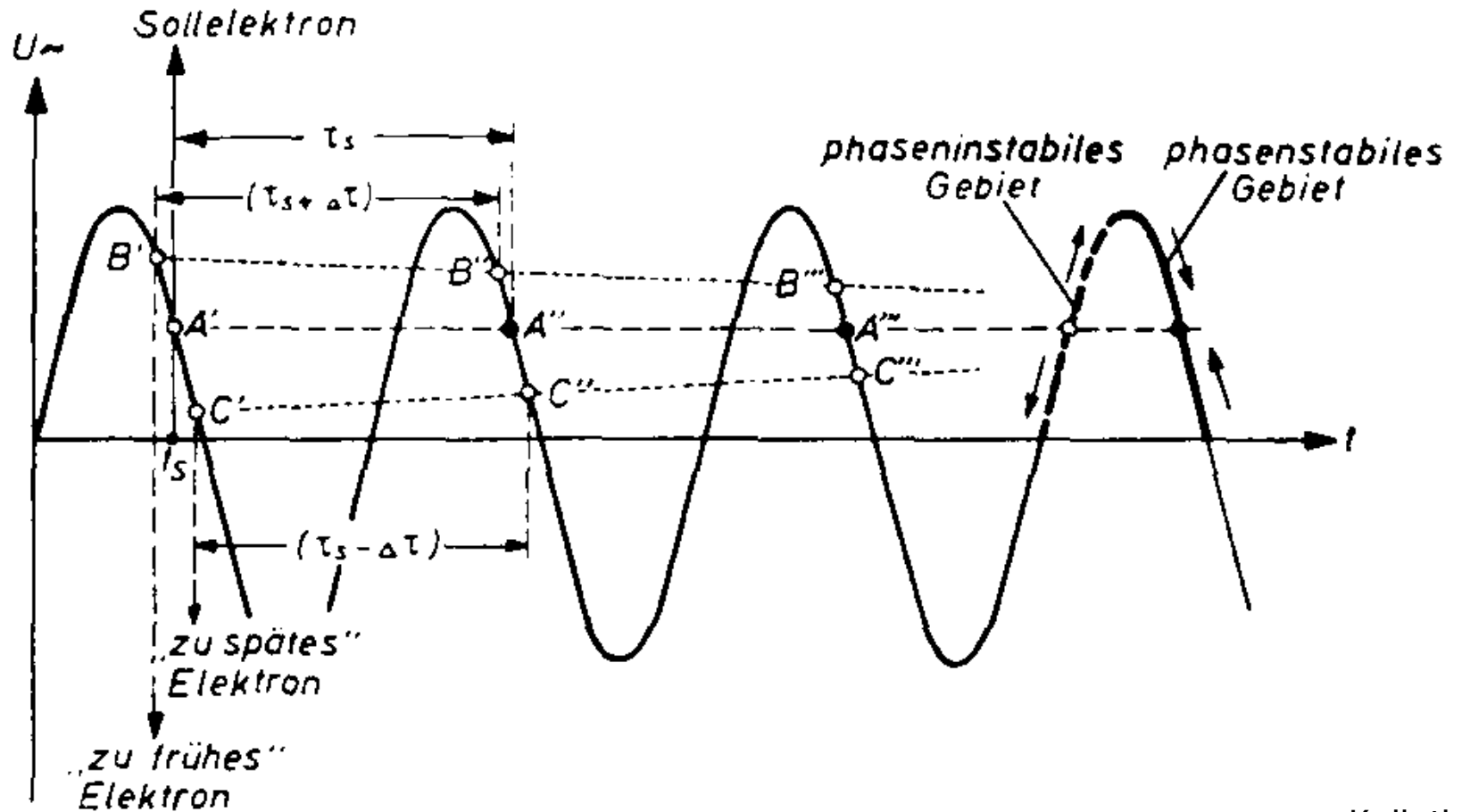
LIL : Linear Injector for LEP
 EPA : Electron-Positron Accumulator
 PS : Proton Synchrotron

SPS : Super Proton Synchrotron
 LEP : Large Electron-Positron Collider
 LHC : Large Hadron Collider

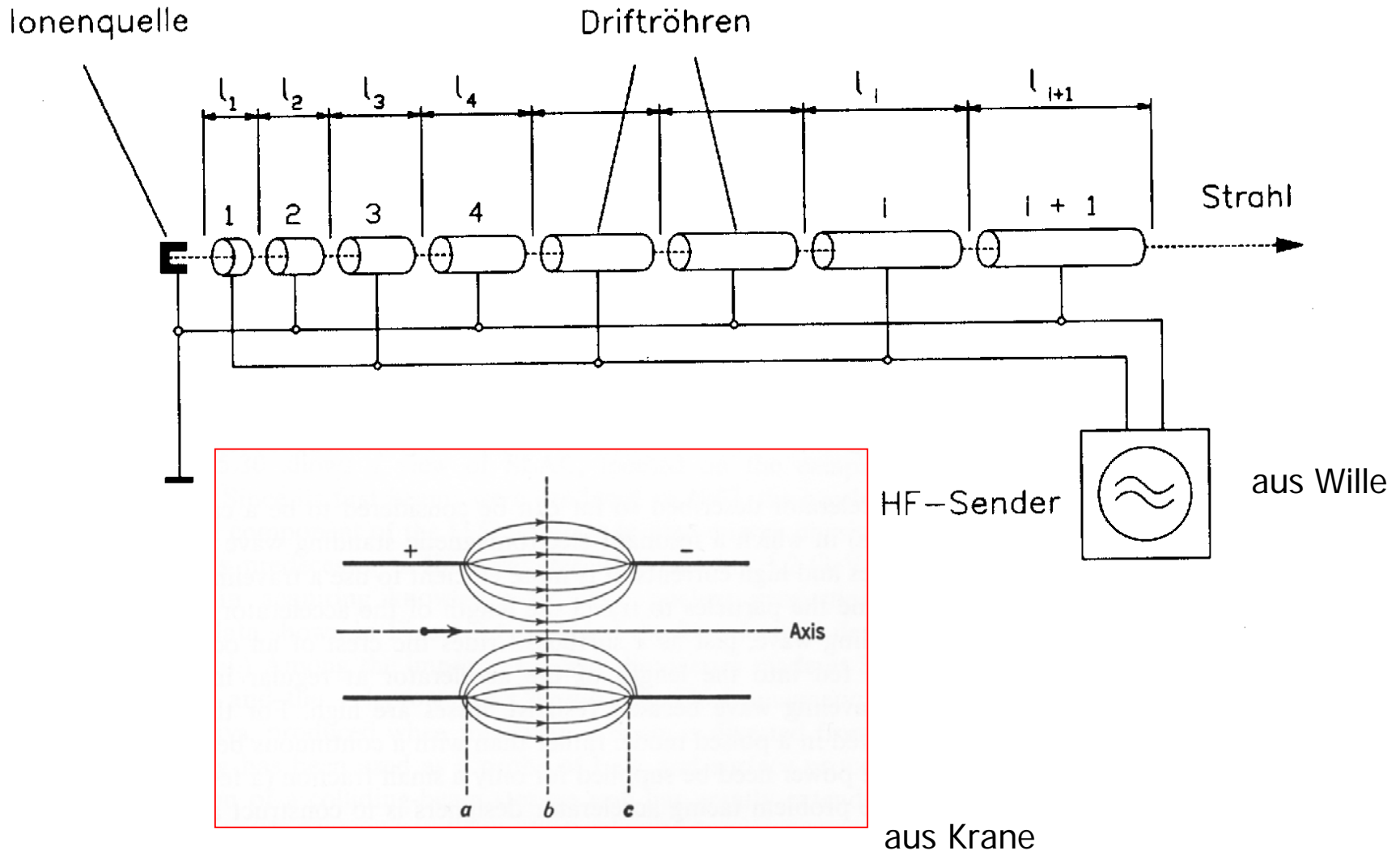
Das CERN bei Genf



Phasenfokussierung

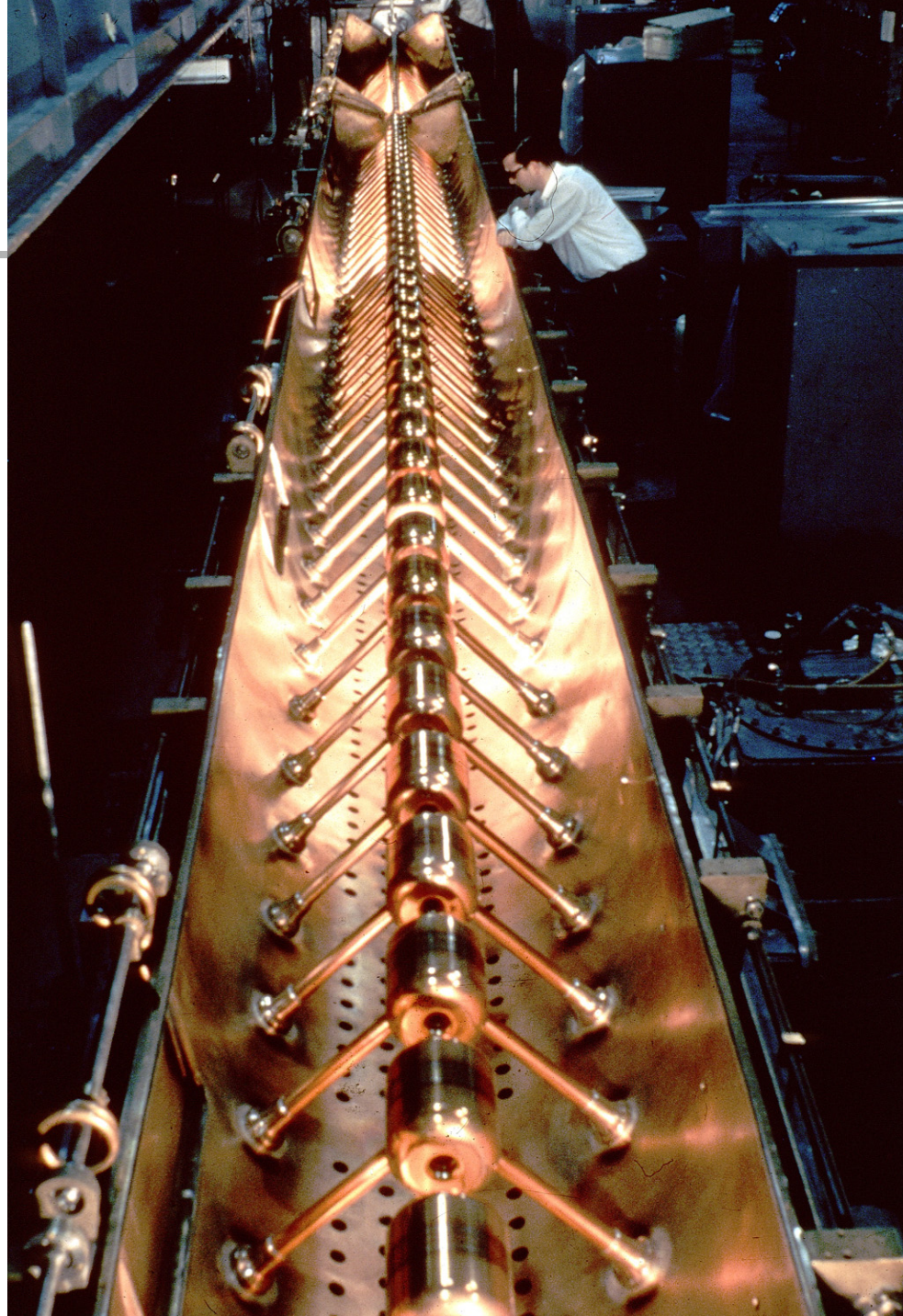


LINAC (Wideroe Typ)

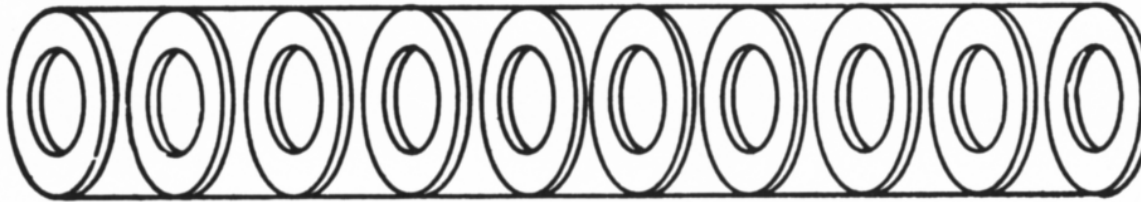




Protonen LINAC



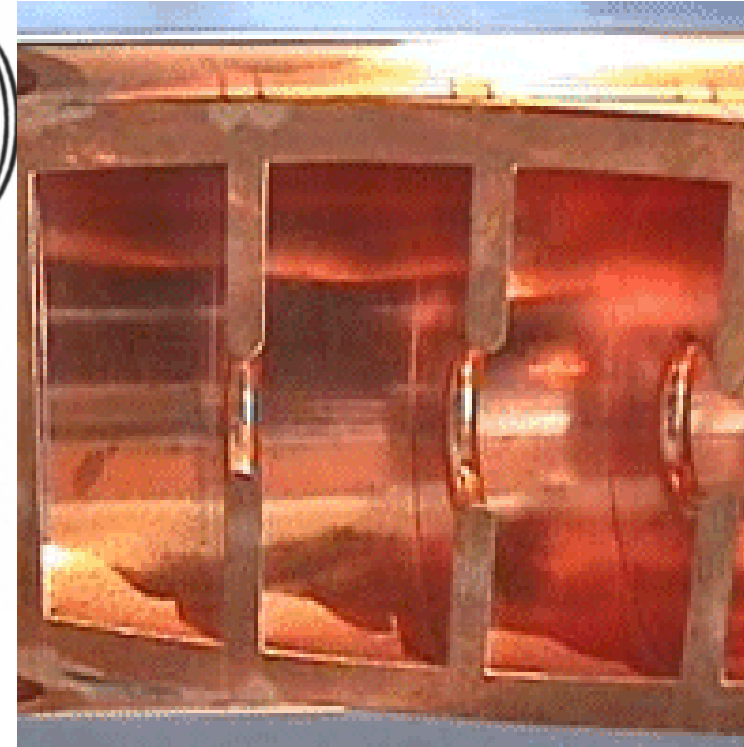
Hohlleiterstruktur (Runzelröhre)



(a)



(b)

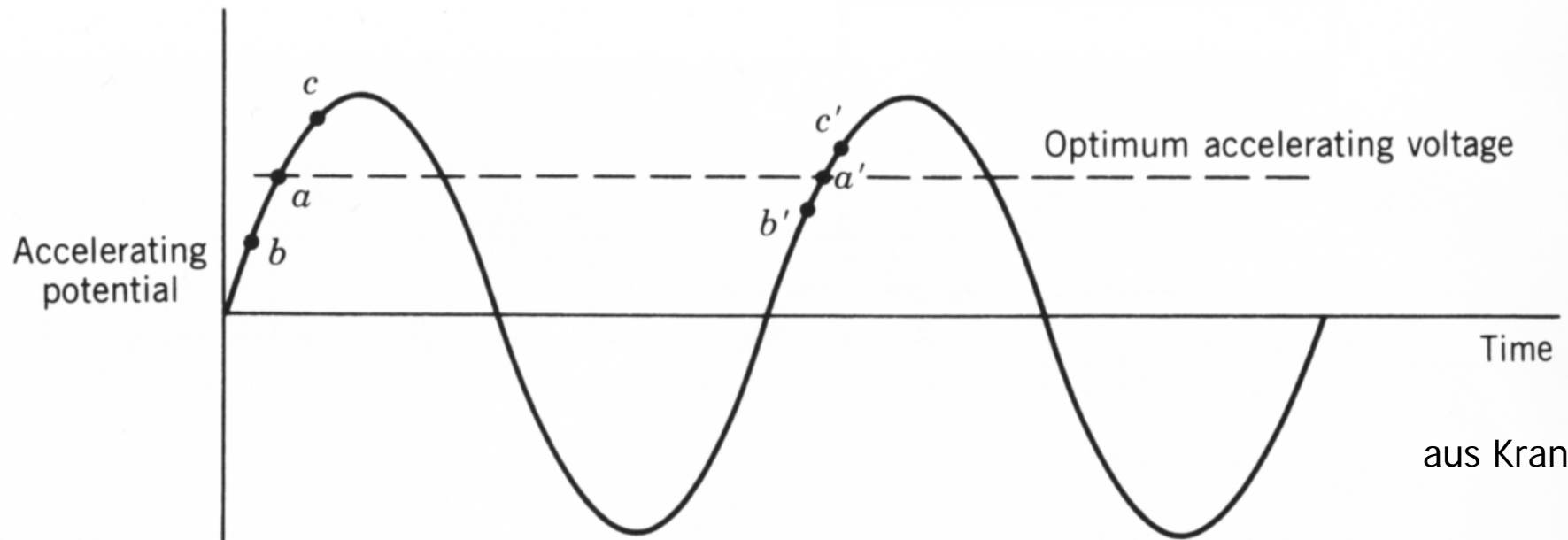


SLAC Struktur

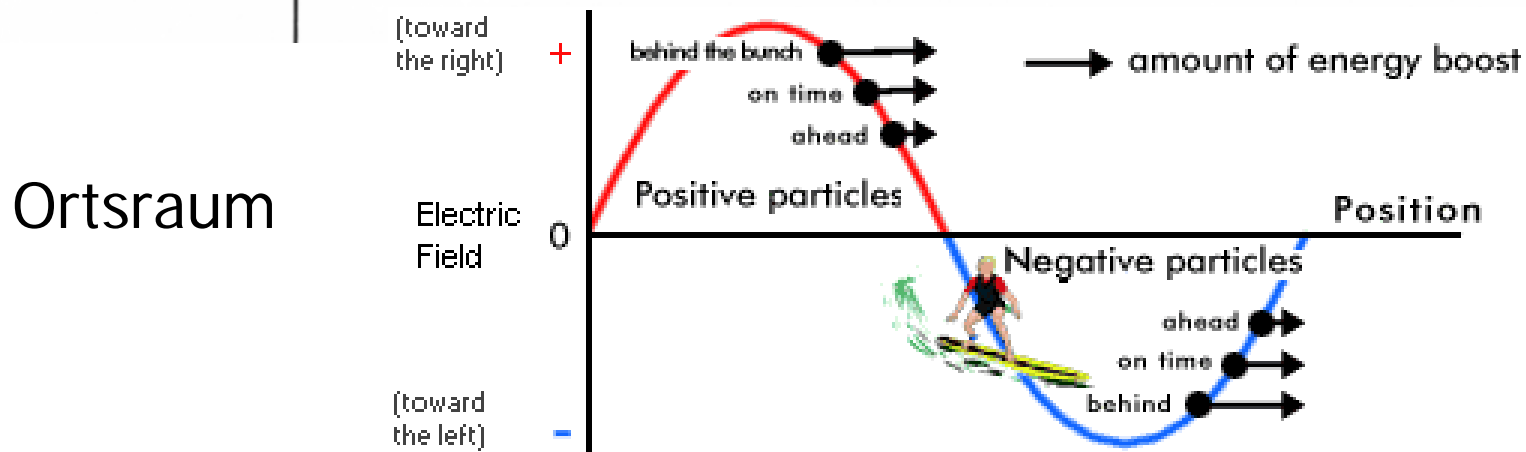


aus Krane

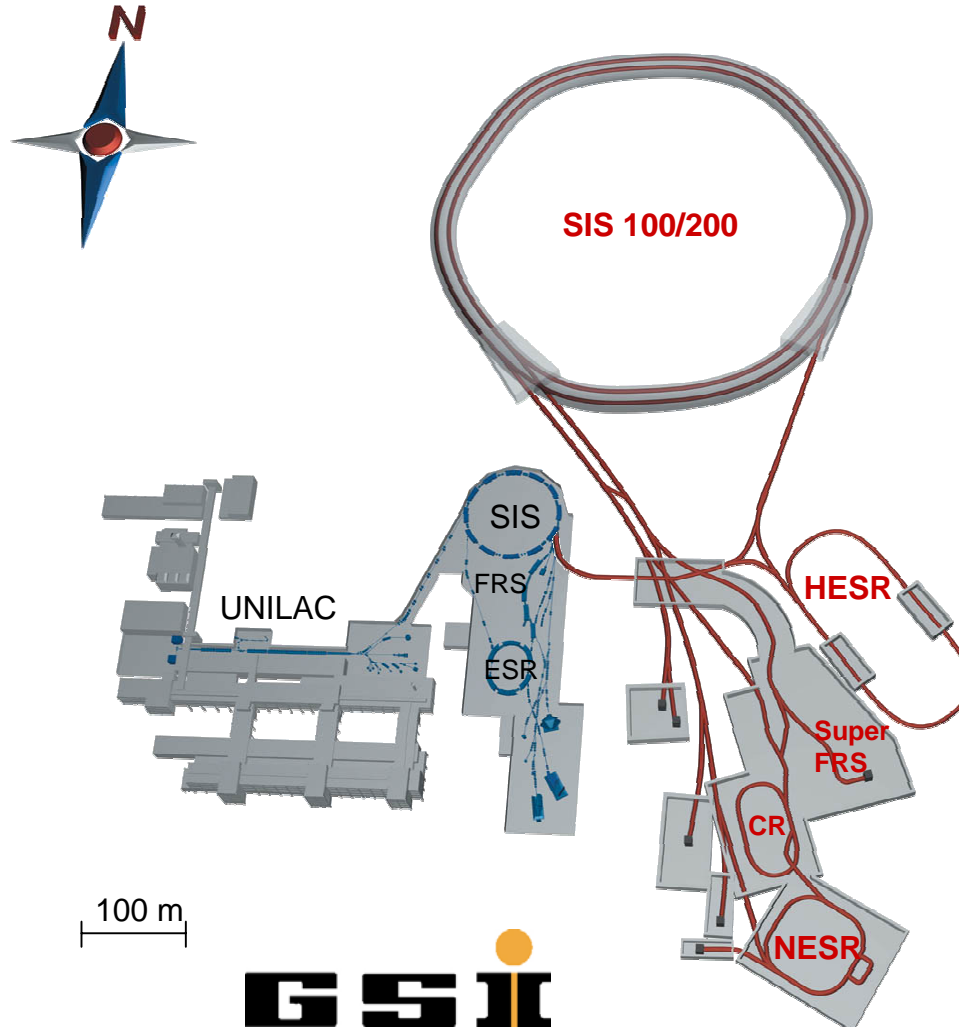
Phasenstabilität am LINAC



aus Krane



Schwerionensynchrotron GSI



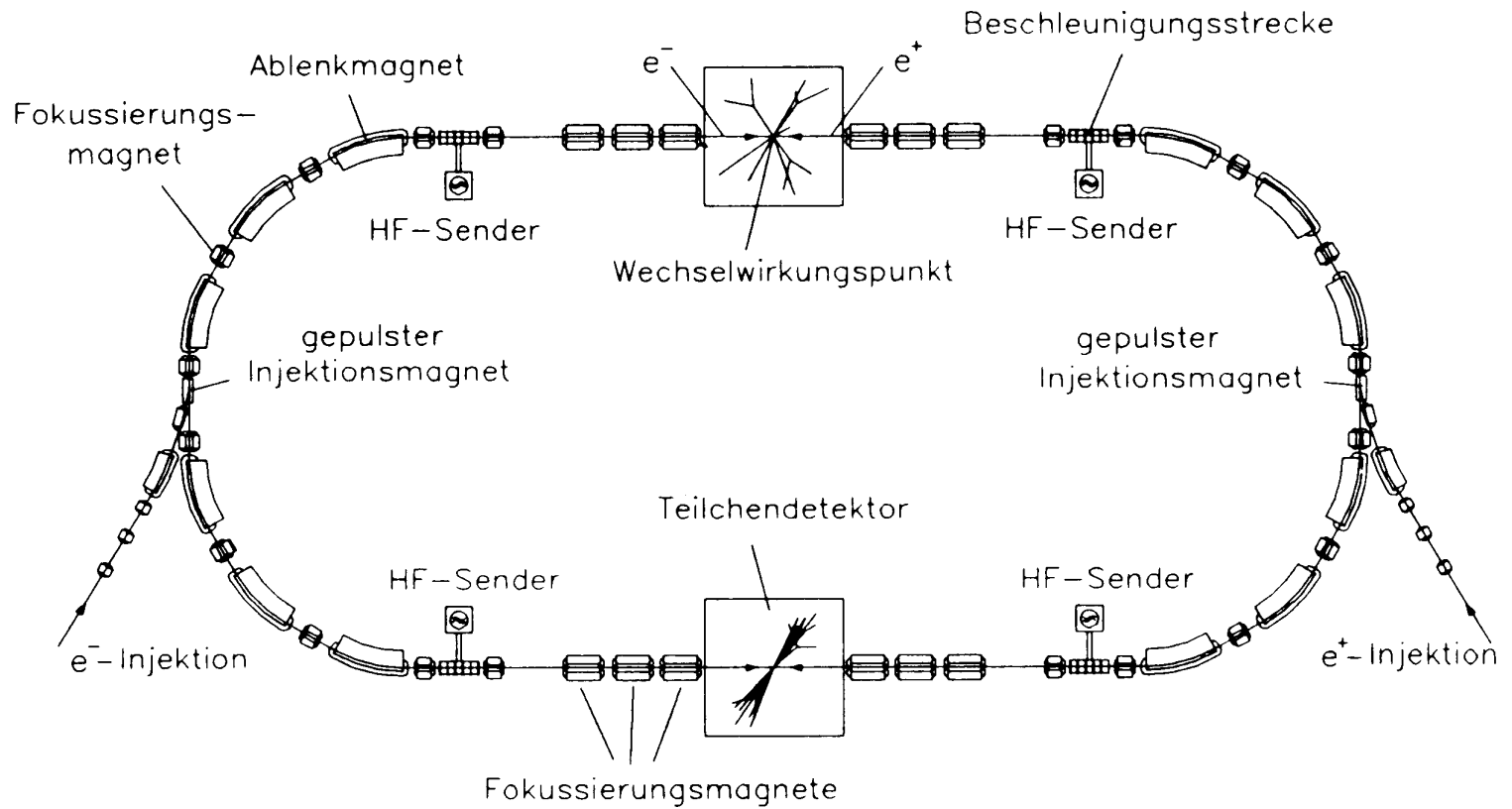
SLAC in Stanford



$L = 3 \text{ km}$
 $E_e = 20 \text{ GeV}$

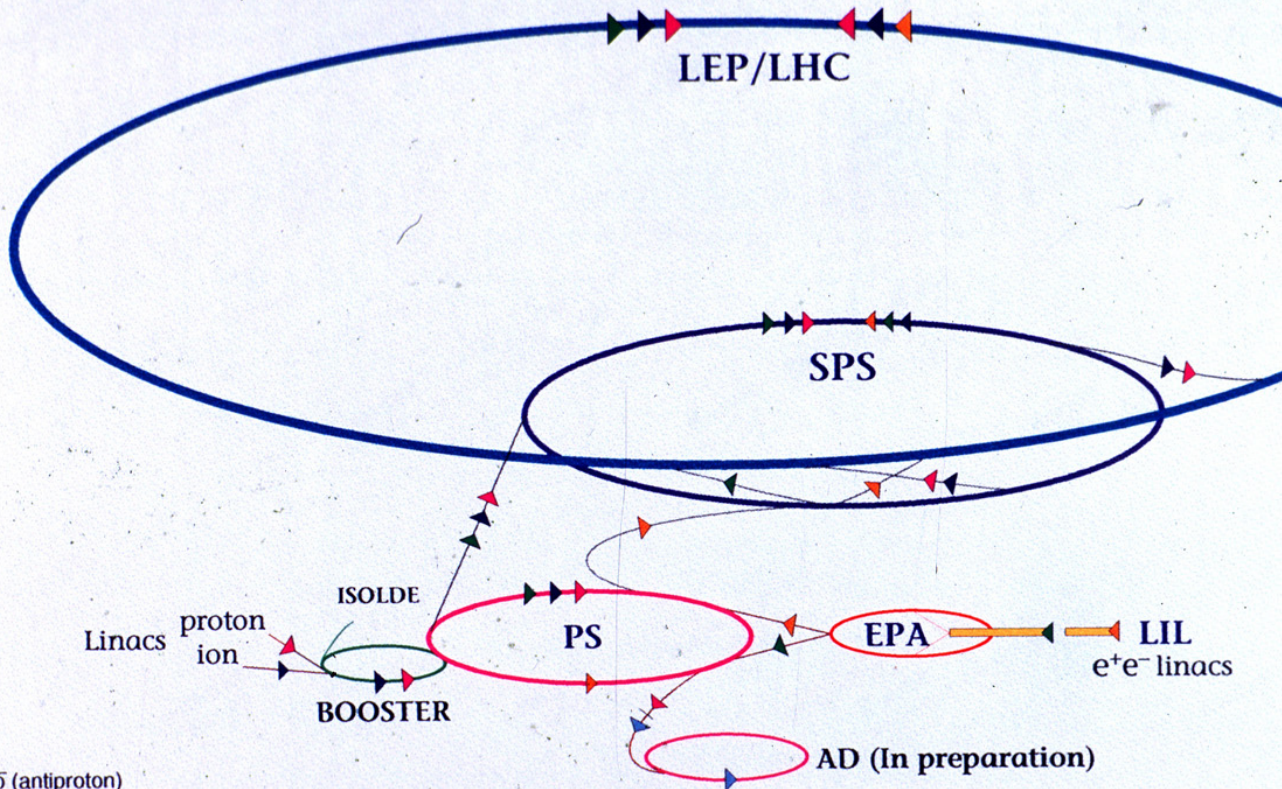
Stanford Linear Accelerator Laboratory

Collider



Die CERN Beschleuniger

CERN's Chain of Accelerators



- ▶ \bar{p} (antiproton)
- ▶ p (proton)
- ▶ ion
- ▶ e⁺ (positron)
- ▶ e⁻ (electron)
- ▶ \leftrightarrow proton/antiproton conversion

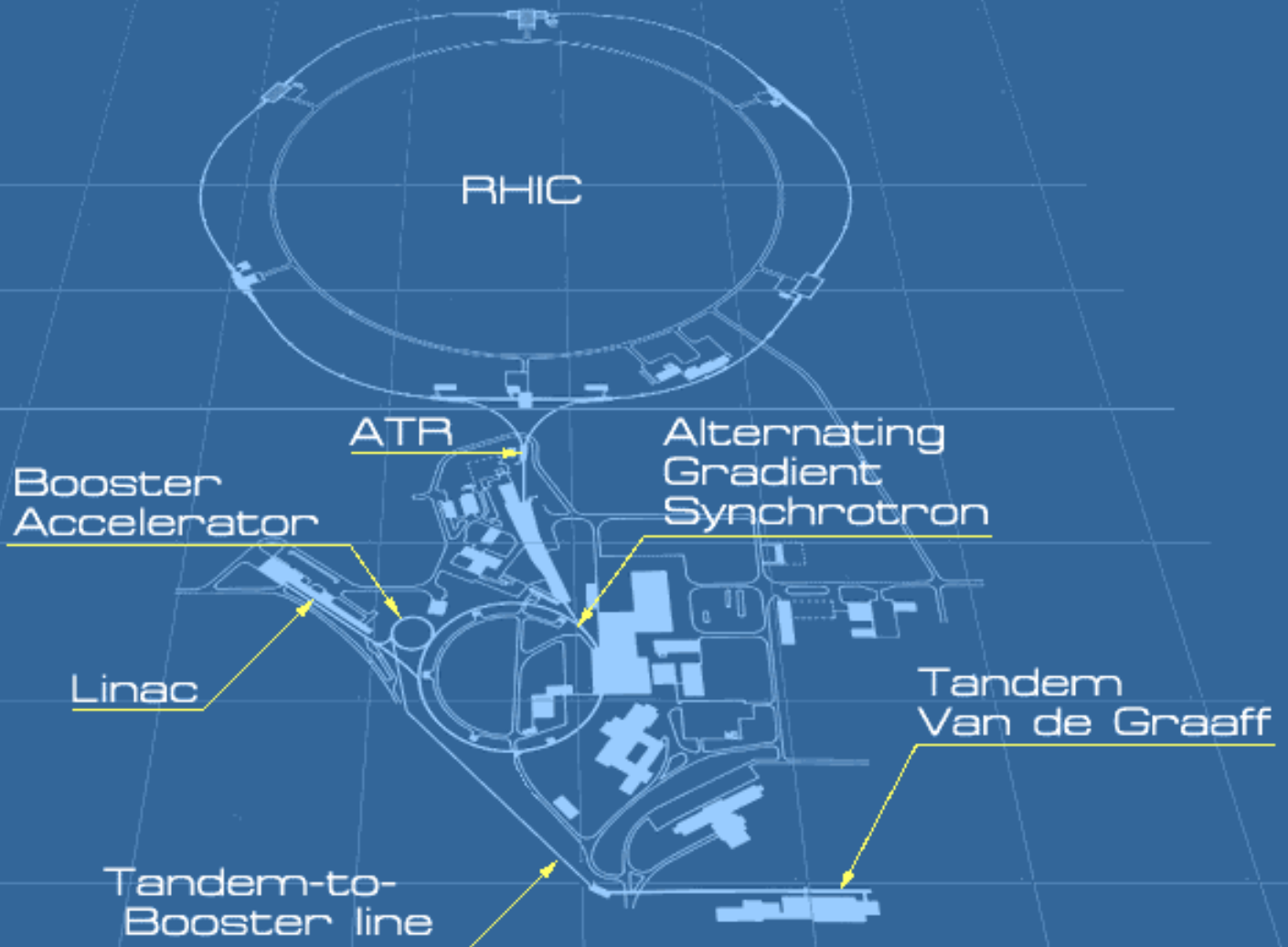
LIL : Linear Injector for LEP
 EPA : Electron-Positron Accumulator
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SPS : Super Proton Synchrotron
 LEP : Large Electron-Positron Collider
 LHC : Large Hadron Collider

Der Relativistic Heavy Ion Collider



Der Relativistic Heavy Ion Collider



Wirkungsquerschnitt

