

Communication for the Large Scale Science lab

GSI at Darmstadt (Germany)

Example of Tumor Therapy with Heavy Ions

**reduced version
without animations**

GSI – Helmholtz Centre for Heavy Ion Research



GSI – Helmholtz Centre for Heavy Ion Research

Budget: 100 Mio. Euro

Employees: 1000

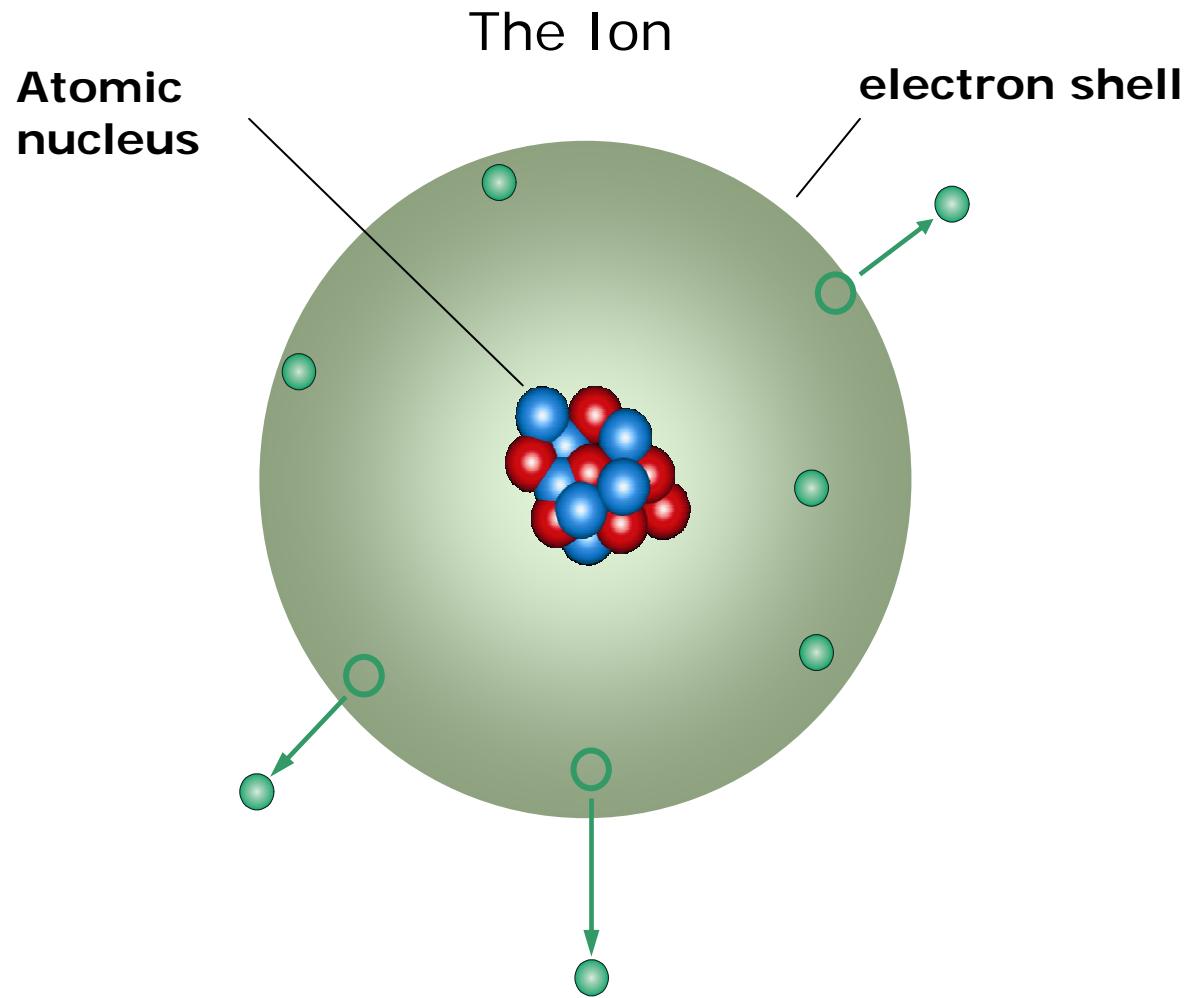
External Scientific Users: 1000

Large Scale Facilities: Accelerators and Experiments

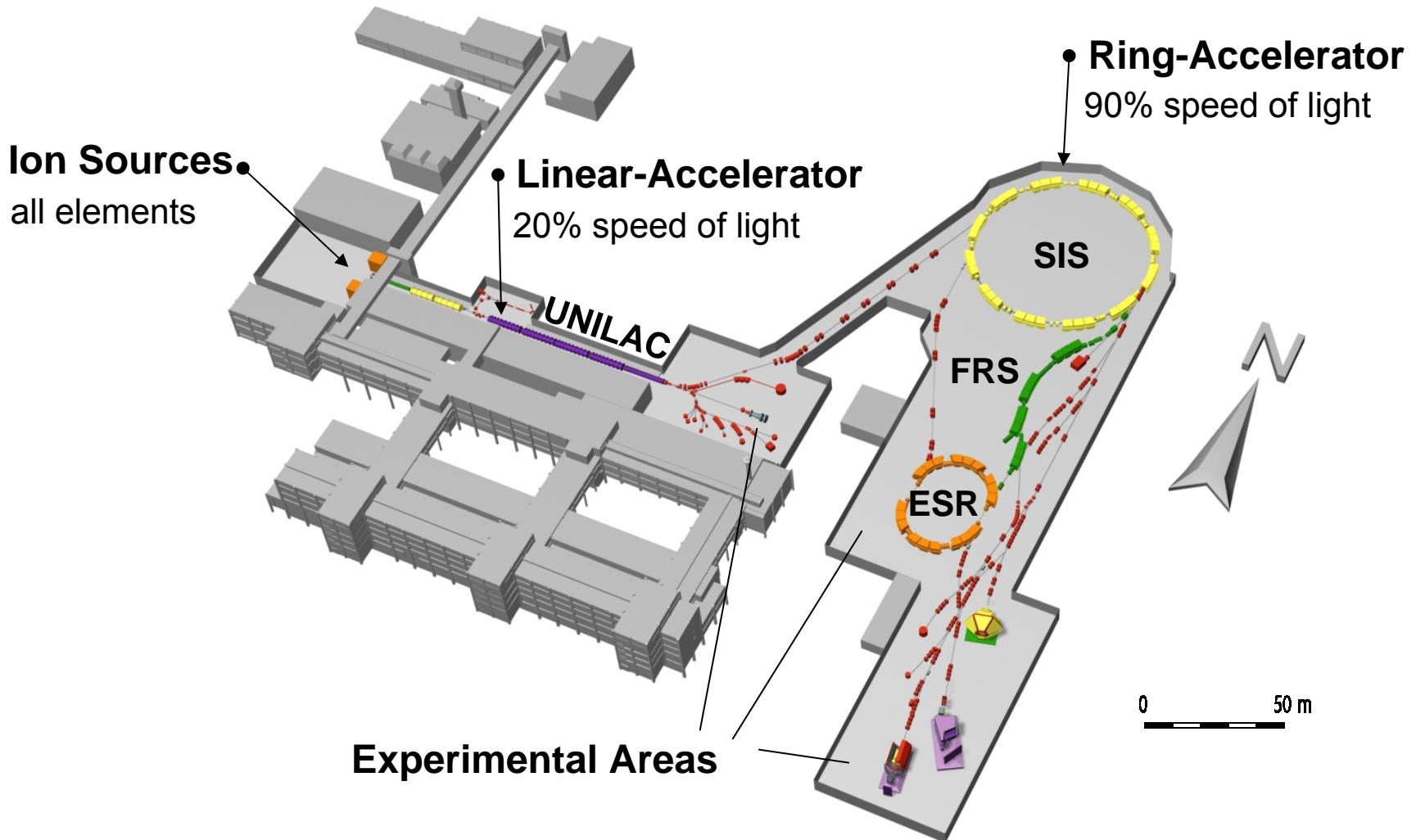
Worldwide Cooperations more than 50 countries



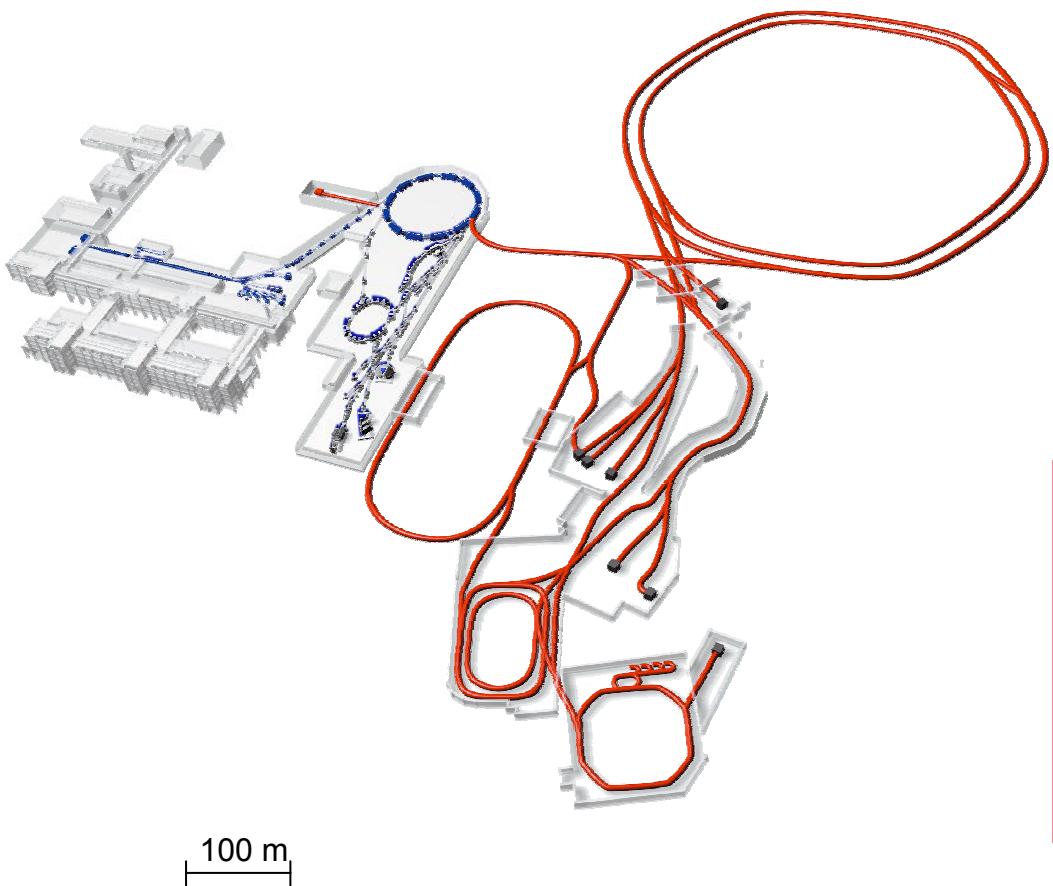
What is an Ion?



Accelerator Facility



FAIR – Facility for Antiproton and Ion Research



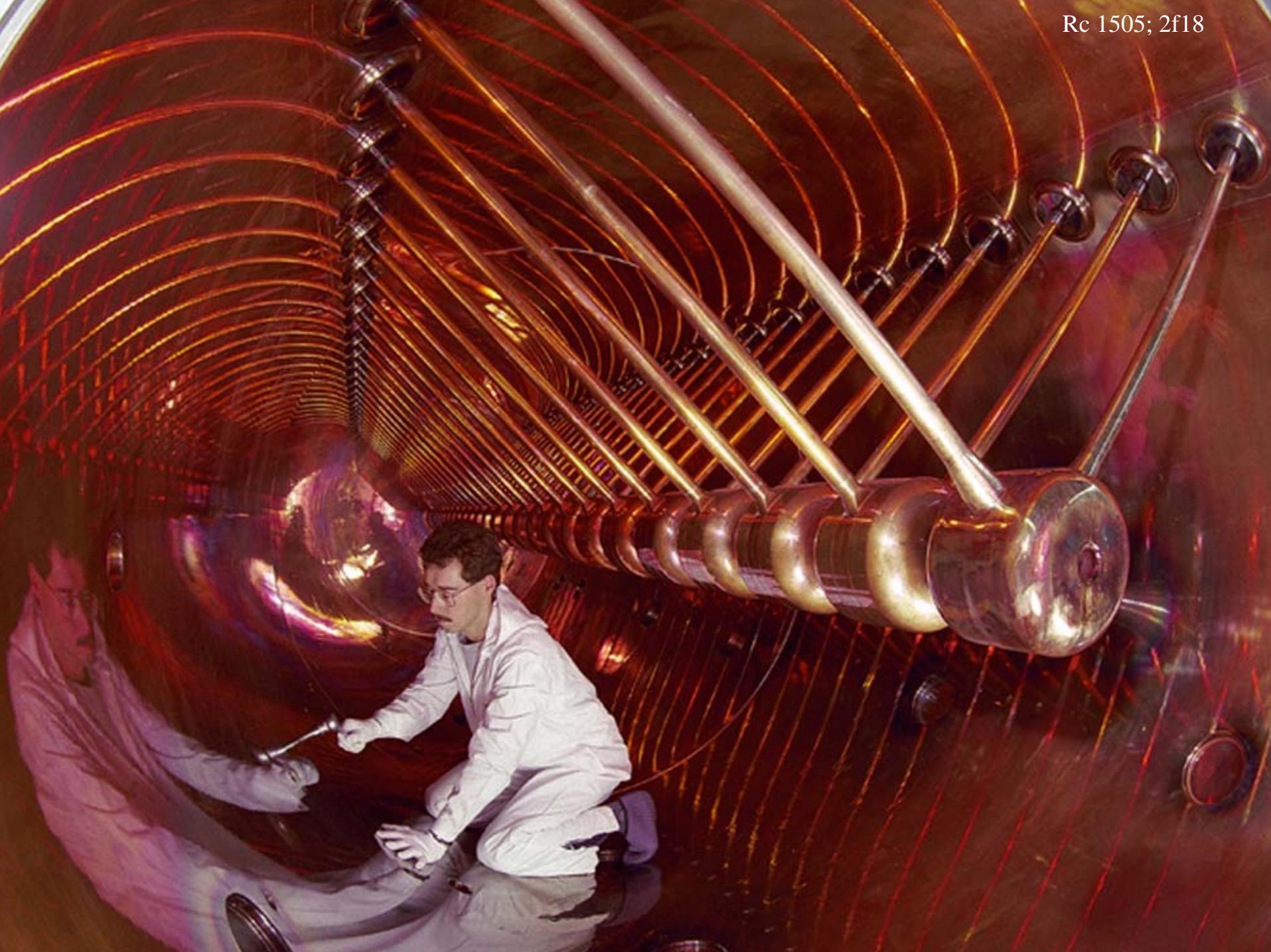
GSI -today

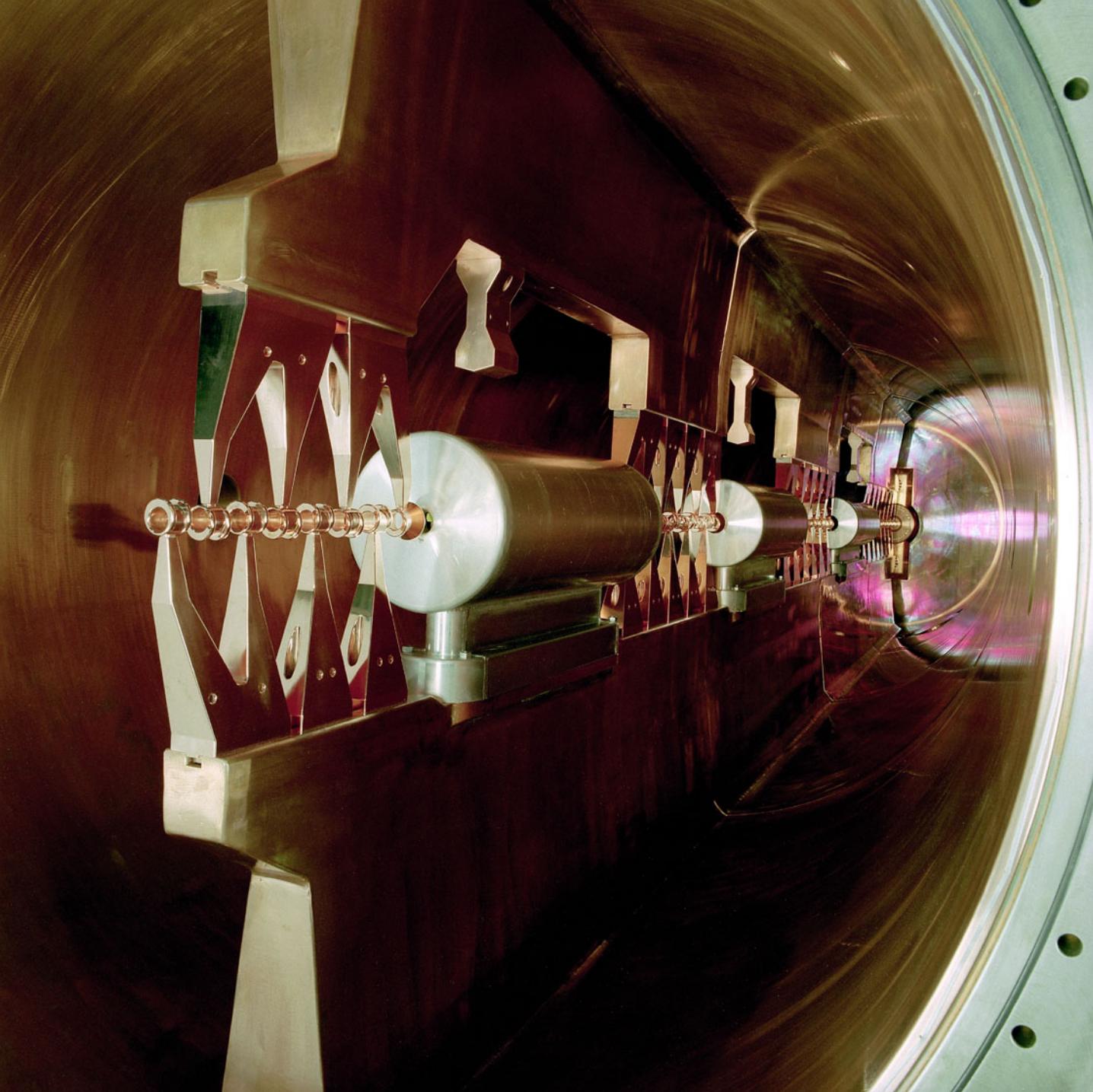
- all kind of ions
- max. 90% speed of light

GSI-tomorrow / FAIR

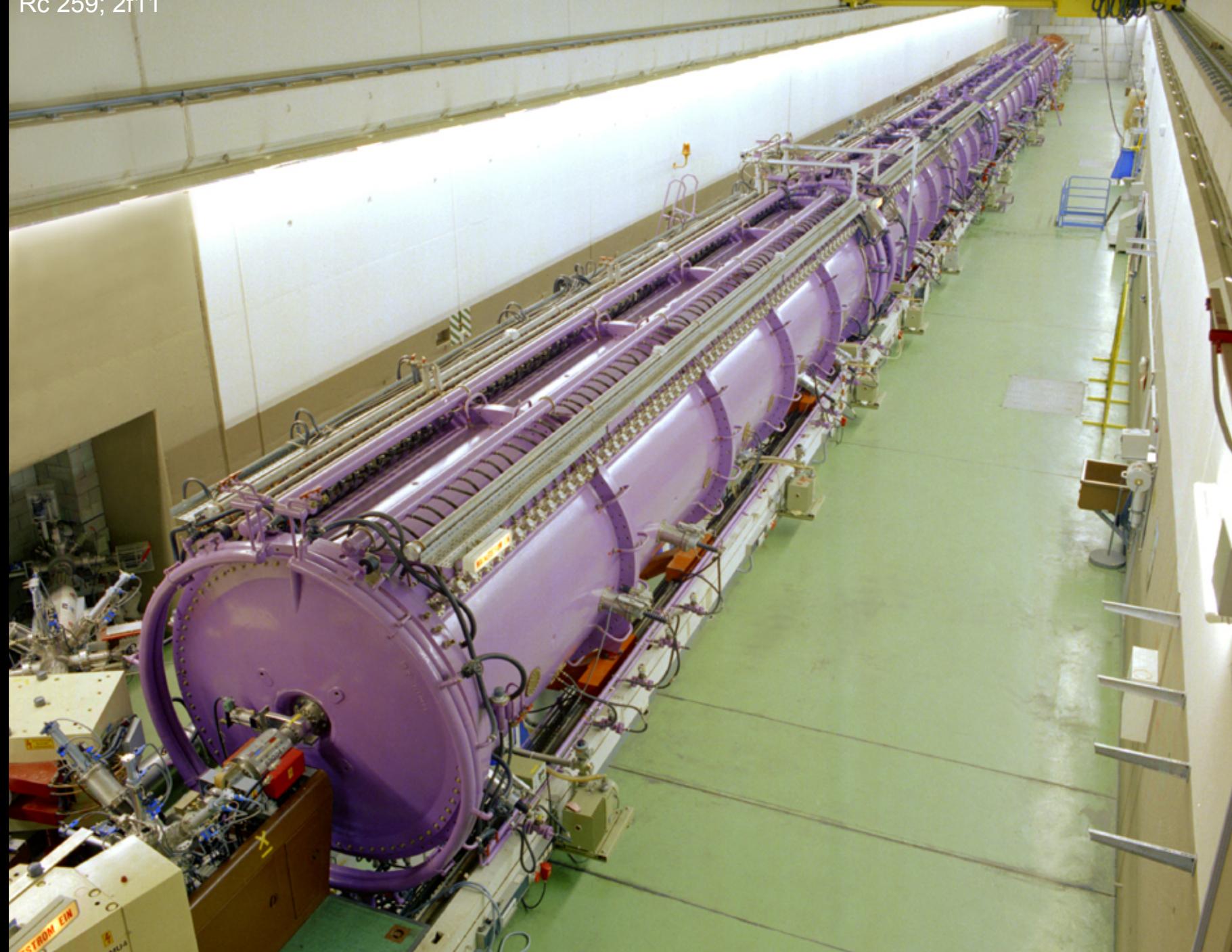
- new isotopes
- Anti-Protons
- 10.000 times more sensitive
- higher speed

Rc 1505; 2f18

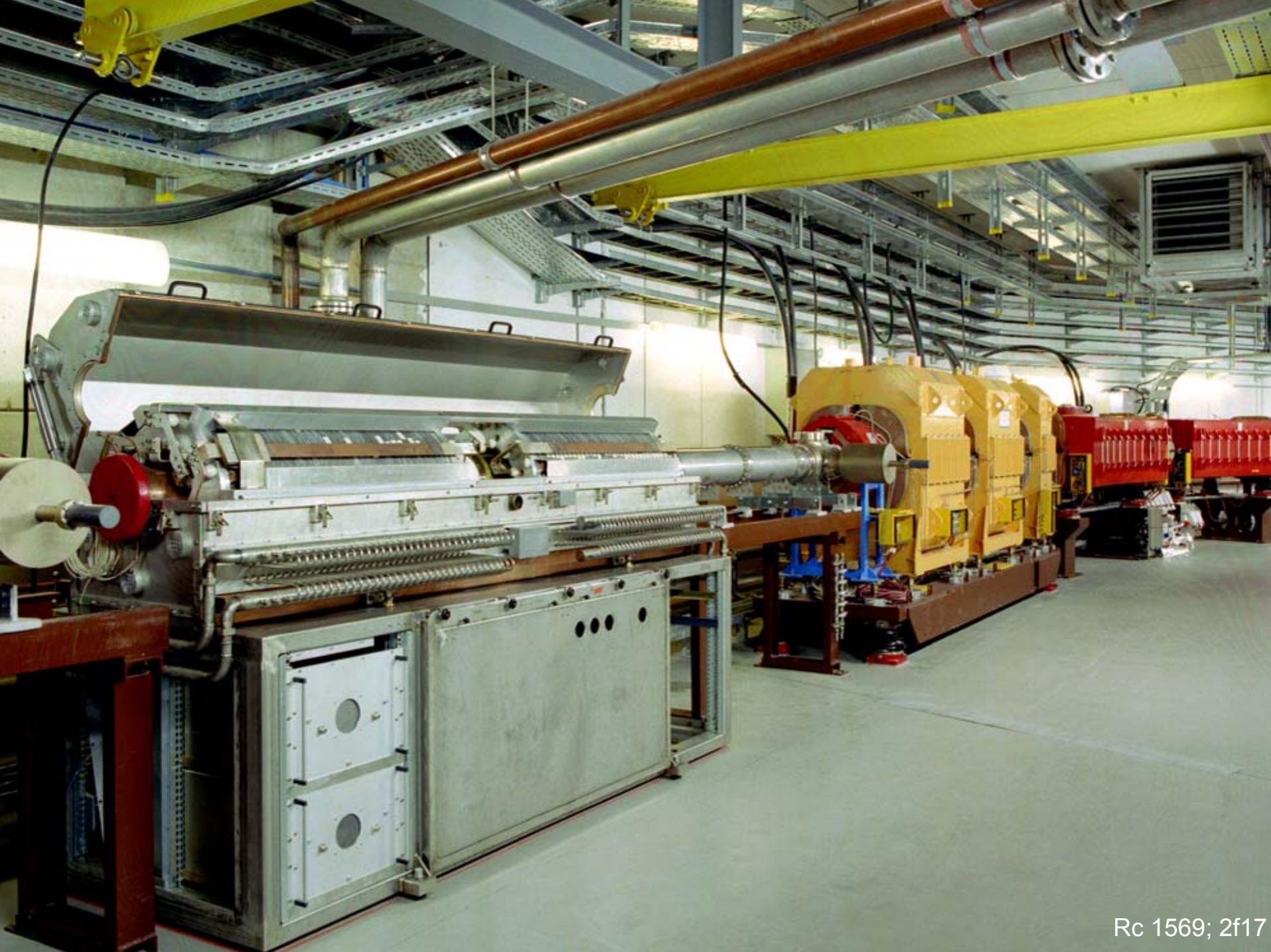




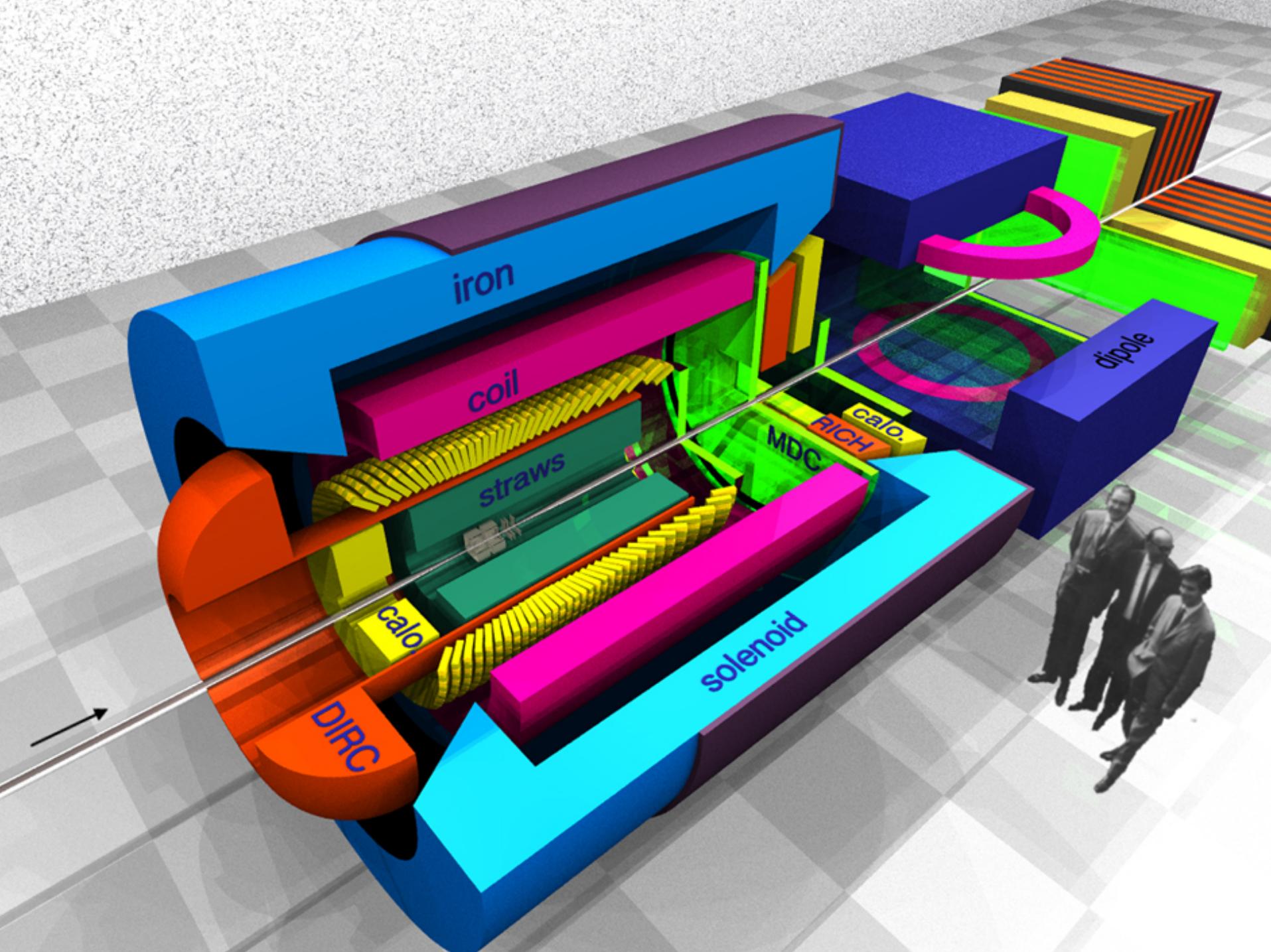
Rc 259; 2f11

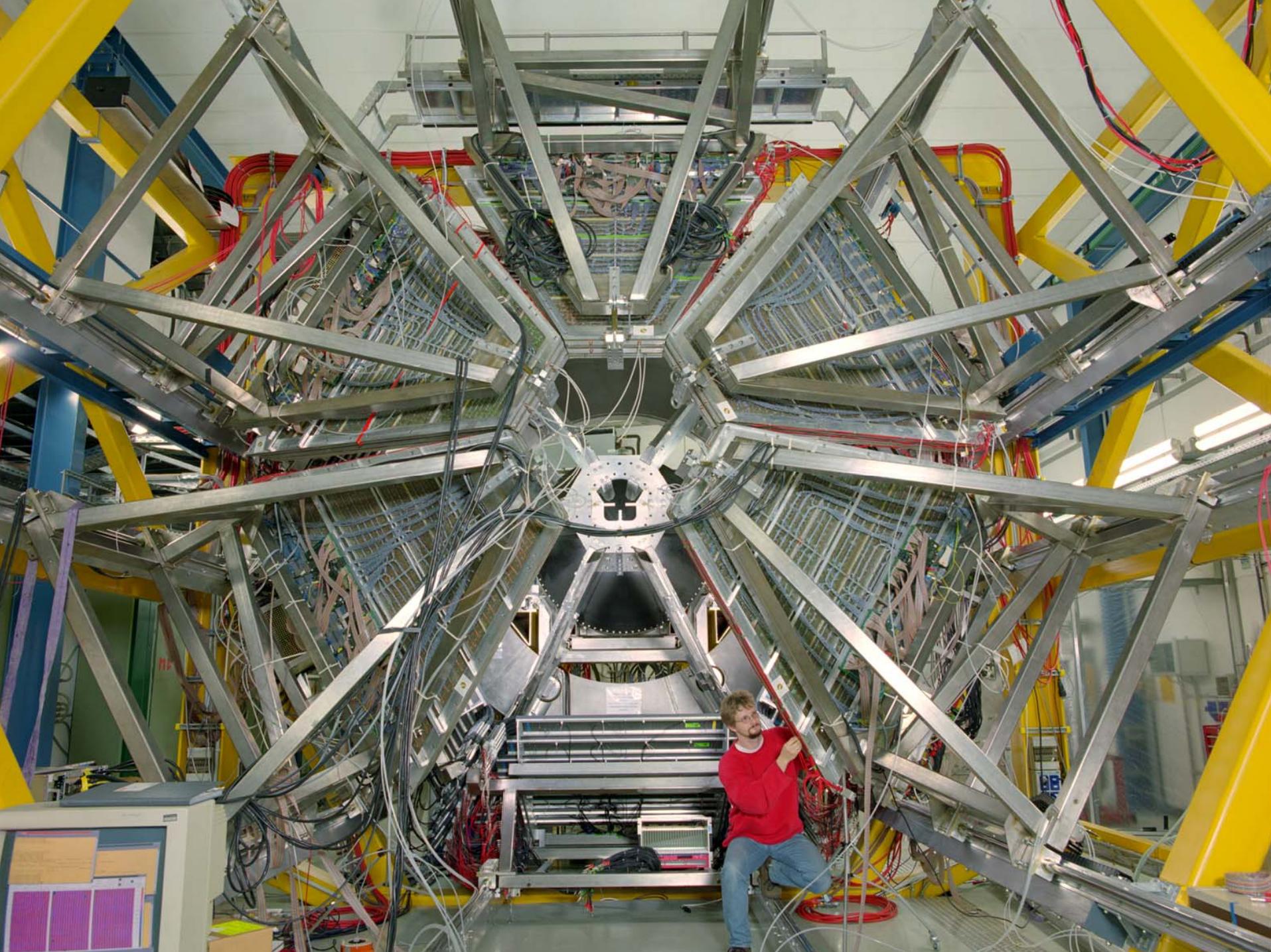






Rc 1569; 2f17





Periodic Table of the Elements

I	VIII																						
H																		He					
Li	Be																						
Na	Mg																						
K	Ca	Sc																					
Rb	Sr	Y																					
Cs	Ba	La	58-71																				
Fr	Ra	Ac	90, 91	U	Np	Pu	95-103												118				
			92	93	94	104	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	113	114	115	116	117			
						105	106	107	108	109	110	111	112			113	114	115	116	117			
																113	114	115	116	117			

Public Christening – in one month on July 12, 2010

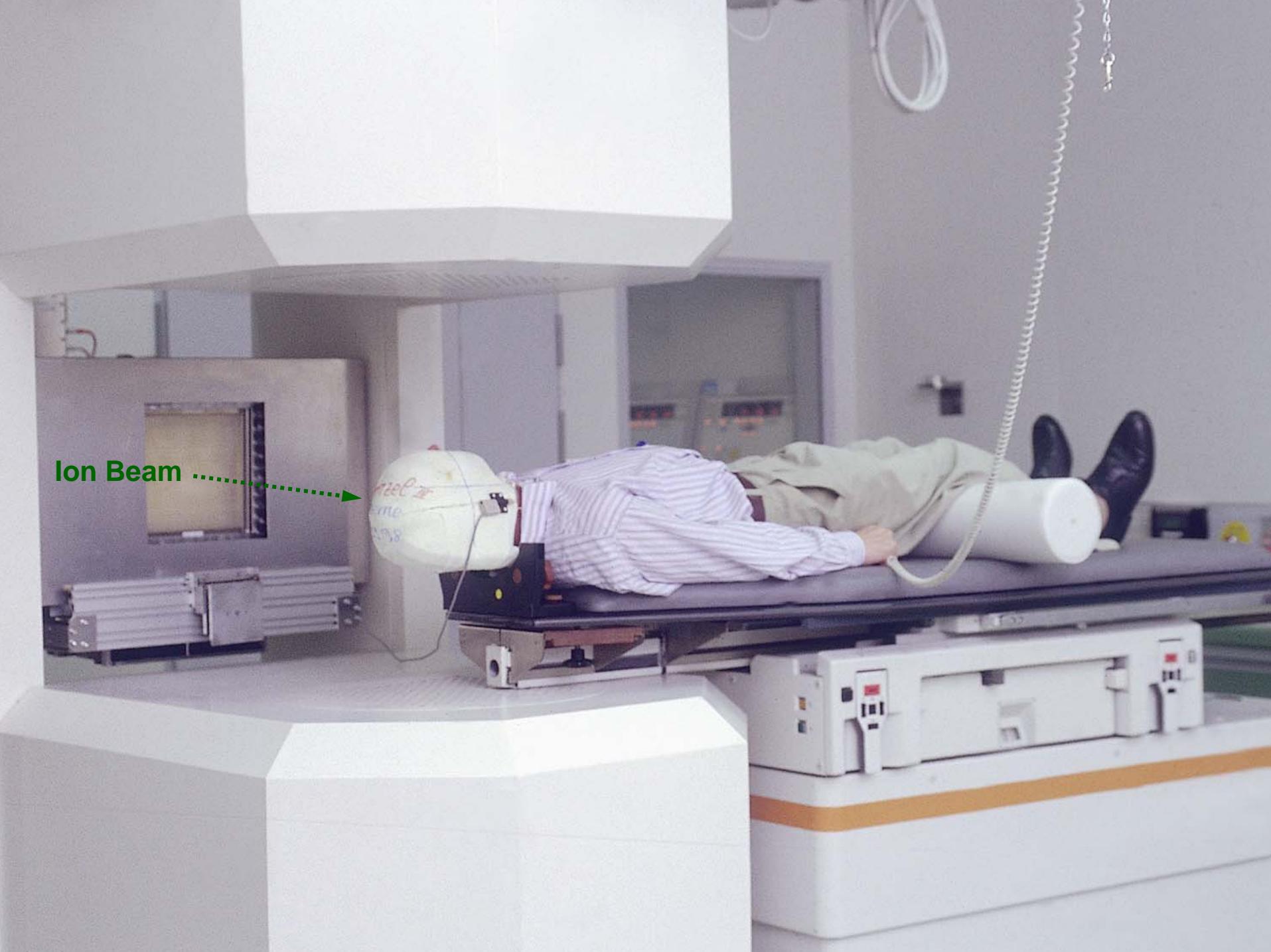
 natural,
stable

 natural,
unstable

 artificial,
unstable

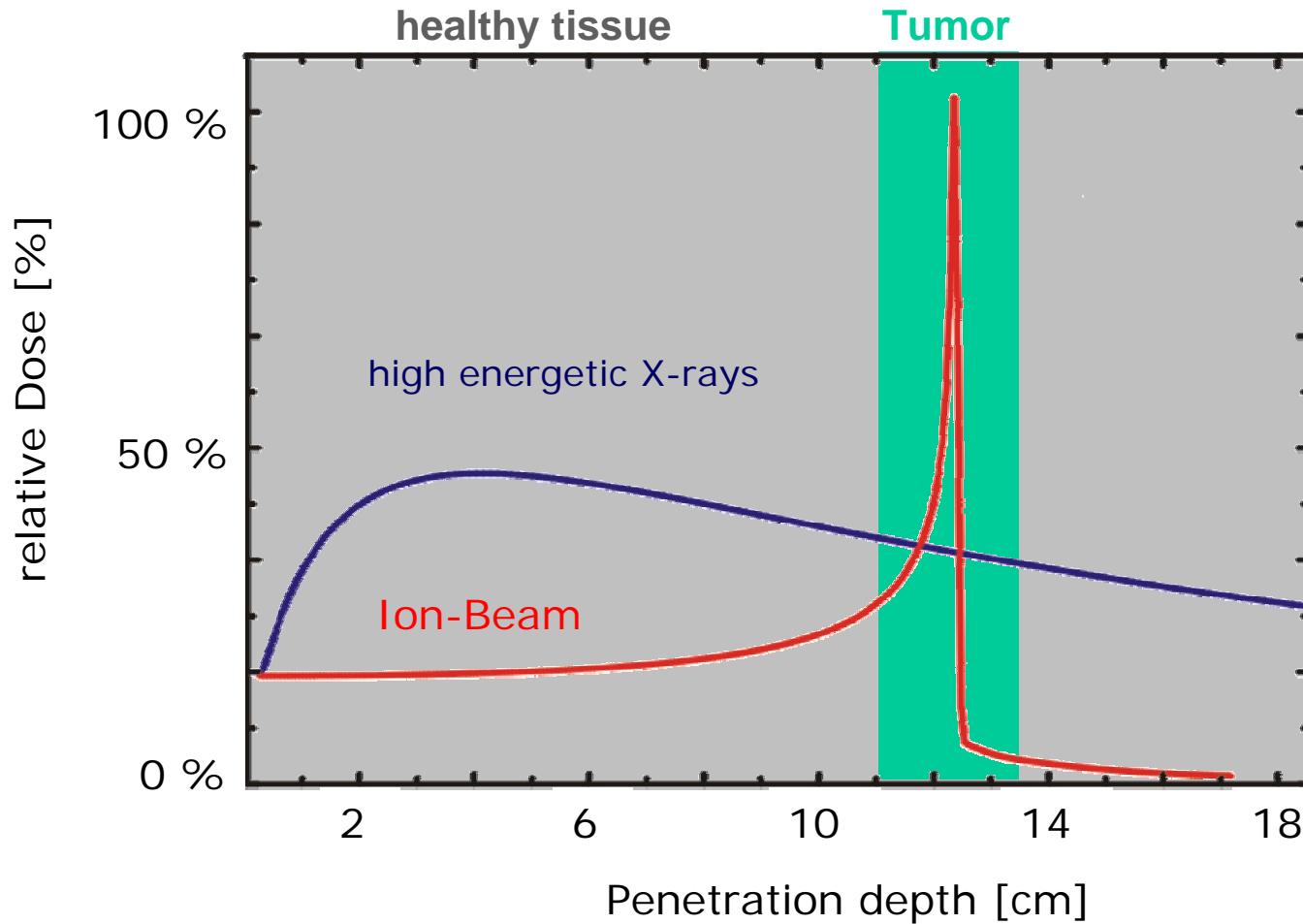
 discovered at GSI,
unstable

 not yet confirmed



Ion Beam

Dose Distributions

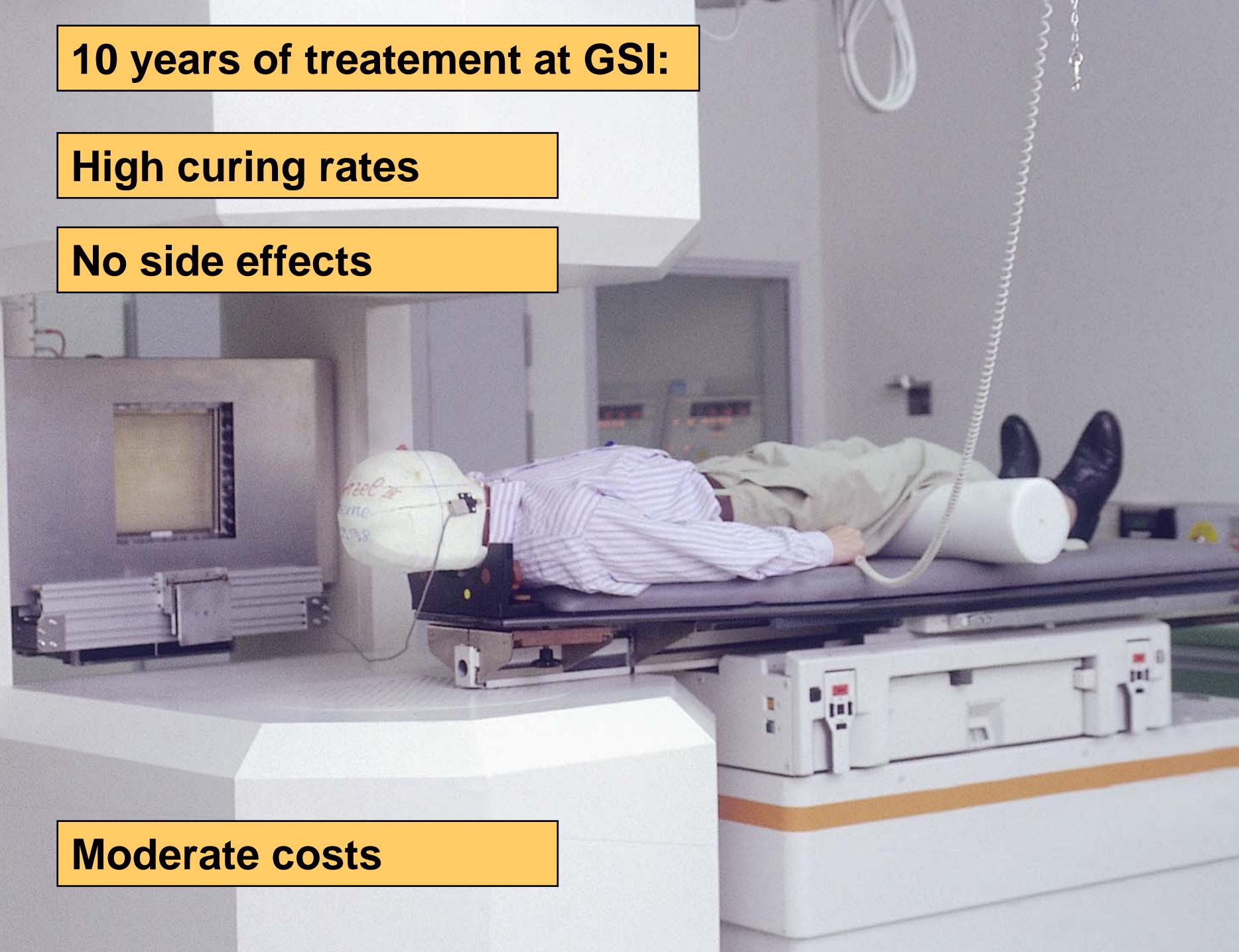


10 years of treatment at GSI:

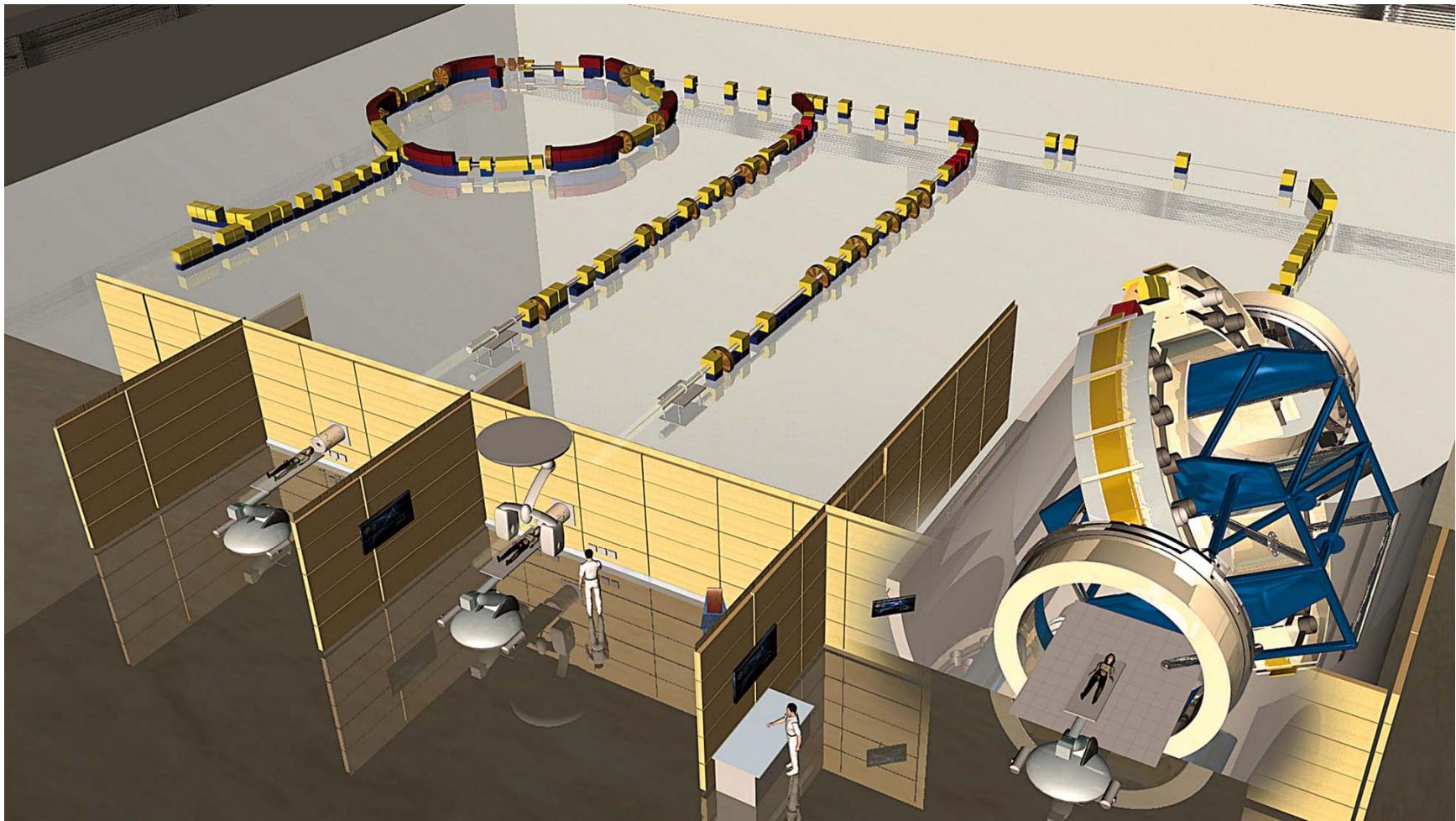
High curing rates

No side effects

Moderate costs



Heidelberger Ionenstrahl-Therapiezentrum HIT



VIP-Visits to the treatment room at GSI

German Minister of Justice



German Minister of Finance



VIP-Visits to the treatment room at GSI

deputy of the prime minister

Prime Minister of the German State of Hessen



Minister of the Sciences



Signing of the contract with Siemens

