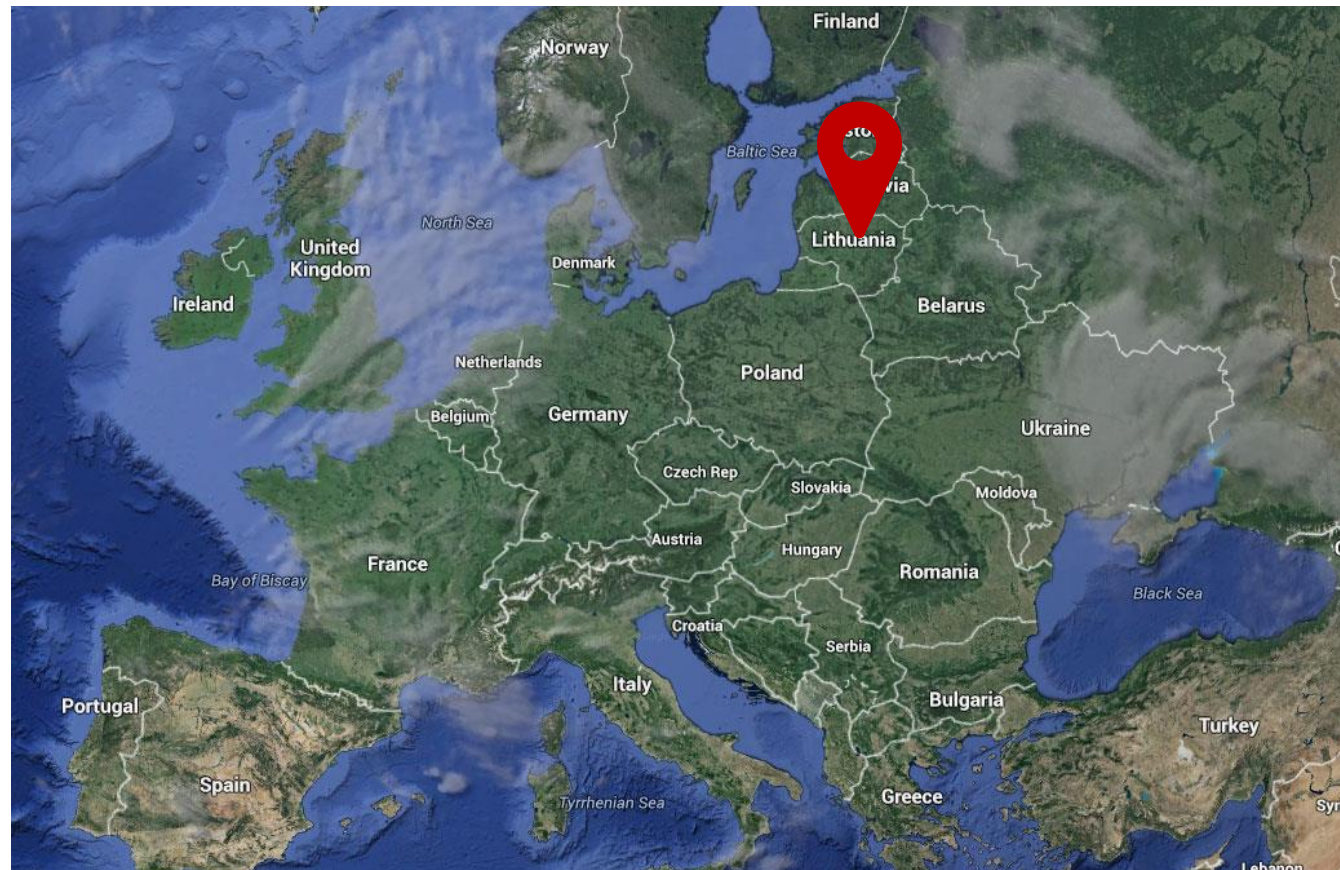


PTMC Video Conference 8 March 2023



Particle Therapy Masterclass



PTMC Video Conference 8 March 2023

<https://indico.cern.ch/event/1246640/>

Video Conference: Particle Therapy MasterClass 8 March 2023

Wednesday 8 Mar 2023, 17:00 → 18:03 Europe/Athens

online <https://cern.zoom.us/j/63695466808?pwd=RnVybXRXMGM9JNENwaDlDWWFkWTRWZz09>

Yiota Foka (GSI - Helmholtzzentrum für Schwerionenforschung GmbH (DE))

Description GENERAL QUESTIONS for BEFORE the MC

https://docs.google.com/forms/d/e/1FAIpQLSdGxZf4Pc6PjQDygoUzRUudOjIbiglBcNSHPdaQQE-KkbJyg/viewform?usp=sf_link

GENERAL QUESTIONS for AFTER the MC

<https://docs.google.com/forms/d/1DPZrRm>

PTMC QUESTIONS

<https://docs.google.com/forms/d/e/1FAIpQL>

ALICE MC QUESTIONS

https://docs.google.com/forms/d/1NvgfML_E

[Animations](#) [GSI historic treatm...](#)

17:00 → 18:03

Video Conference: 8 March 2023

Convener: Yiota Foka (GSI - Helmholtzzentrum für Schwerionenforschung GmbH (DE))

[Statistics of PTMC](#)

17:00 **Welcome**

Speaker: Yiota Foka (GSI - Helmholtzzentrum für Schwerionenforschung GmbH (DE))

1m

17:02 **HITRIplus EU-funded project in support of Particle Therapy**

Speaker: Dr Angelica Facchetti (CNAO Foundation)

1m

[HitriPlusproject PT...](#)

[HitriPlusproject PT...](#)

17:10 **Presentation from LITHUANIA**

Speakers: Ausra Kyniene, Dr Brigita Abakeviciene, Elona Juozaityte

10m

17:52 **Quiz**

[quiz-PTMC-2020-DS...](#)

[quiz-PTMC-2020-DS...](#)

8m

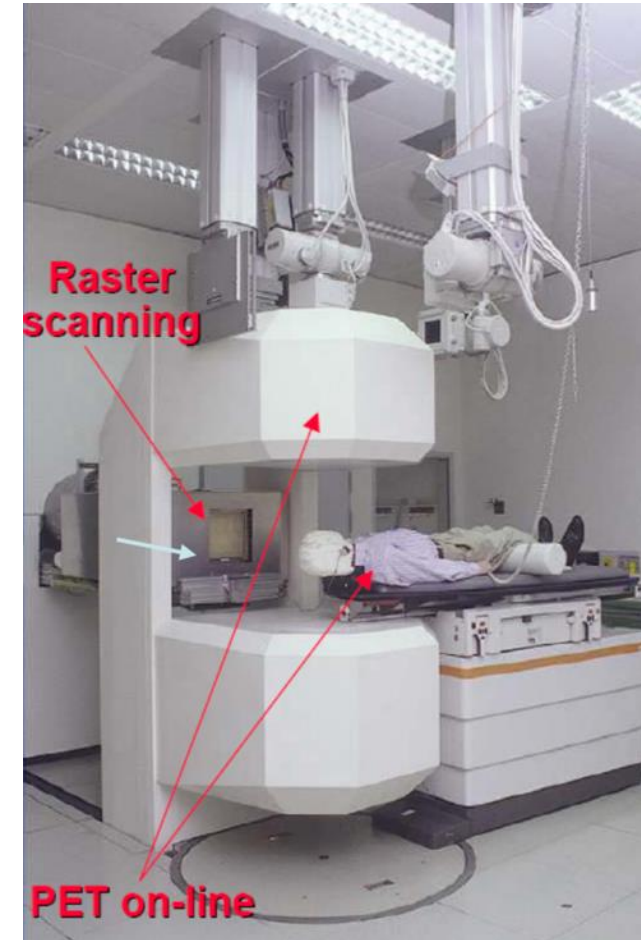
From the historic GSI therapy room Cave M

https://www.dropbox.com/scl/fo/y32povwa5jdi7gwrddmmu2/h?dl=0&preview=05-20210609_virtual-visit_therapie_en.mp4&rlkey=cqpllc473dlrjy1dyi95mfoje





Heavy-ion research and heavy-ion therapy at GSI



Pioneered heavy-ion (carbon) therapy for cancer tumours in Europe (90s).

Heavy-ion research and heavy-ion therapy at GSI

Synchrotron (Particles up to 70% of light speed)

Linear Accelerator

Ion Source Carbon

Ion Source Proton

Scanning System

Scanning Magnets

Wire Chambers

Ionization Chambers

Monitor System

Online Monitoring

Target Volume

Example

Depth 5 cm:
Proton 80 MeV
Carbon 145 MeV/u

Depth 25 cm:
Proton 195 MeV
Carbon 375 MeV/u

Relative Dose

Depth

Raster scanning

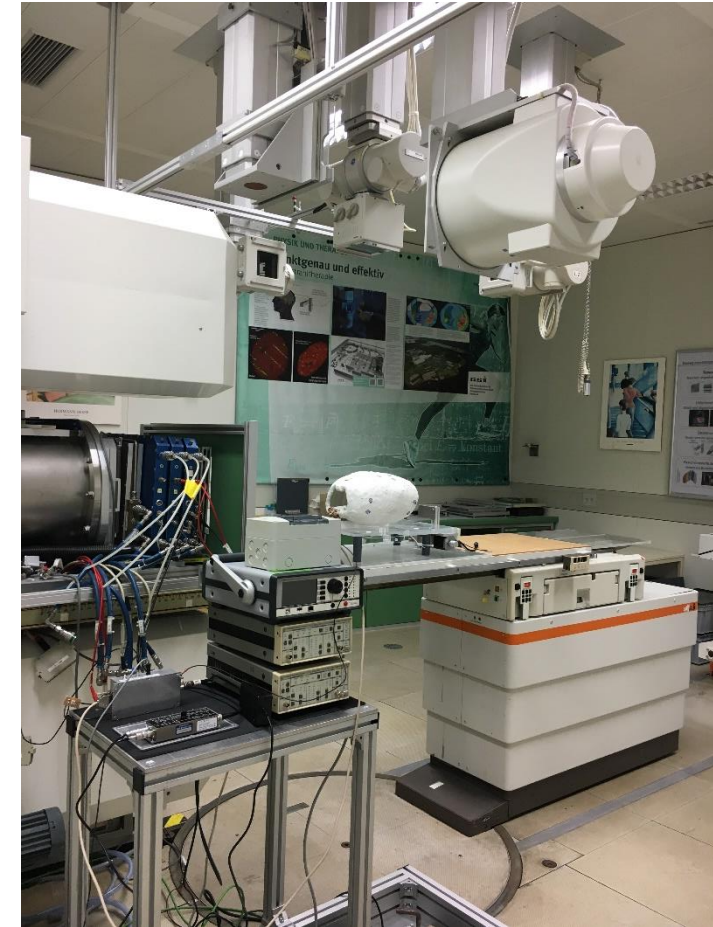
PET on-line

Rasterscan Method

Haberer et al., NIM A , 1993

Implemented in the Heidelberg and Marburg Ion Treatment centers (HIT and MIT) in Germany

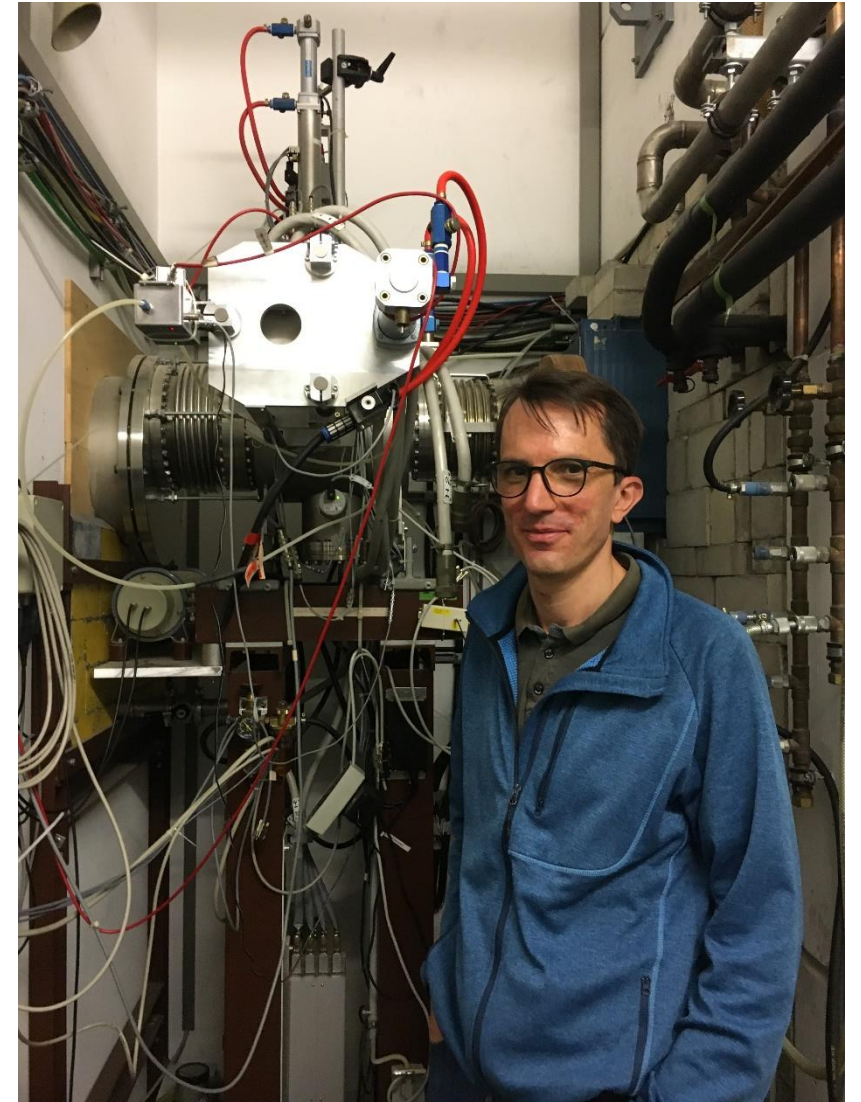
The heavy-ion therapy room at GSI today



Haberer et al., NIM A , 1993

**Implemented in the Heidelberg and Marburg Ion Treatment centers
(HIT and MIT) in Germany**

What is behind the wall?



What is behind the wall?

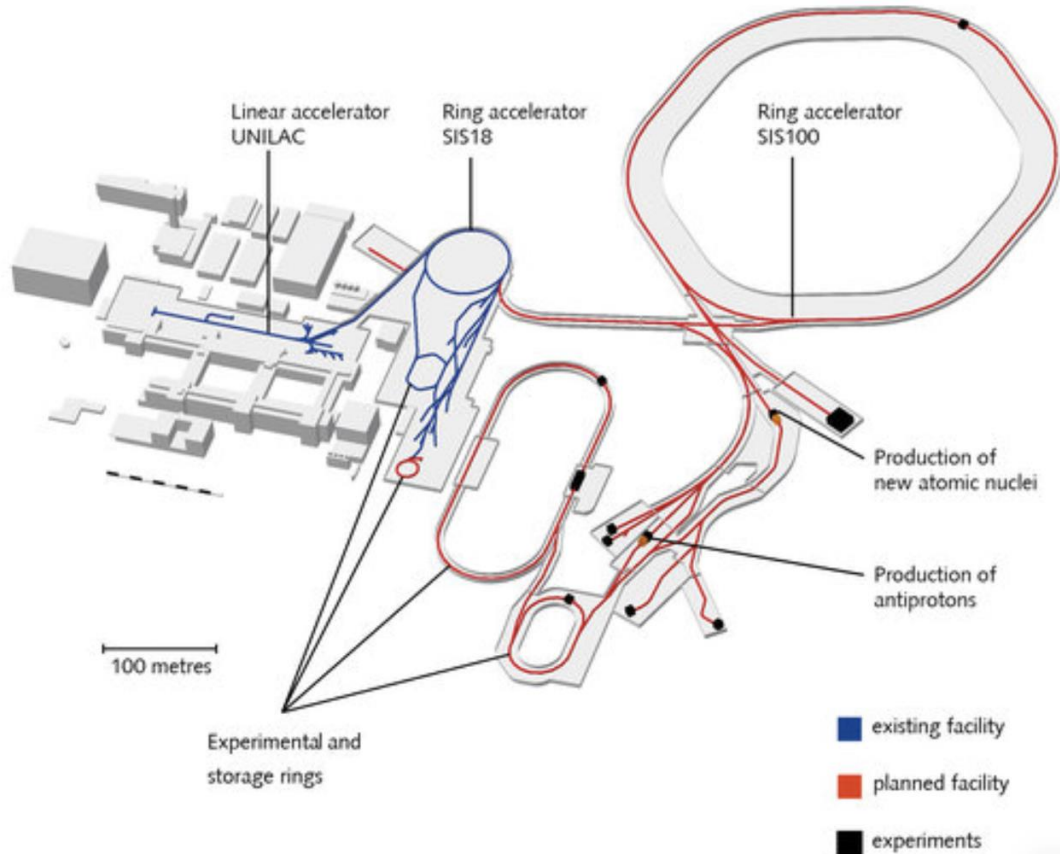


Photo: J. Mai / GSI Helmholtzzentrum für Schwerionenforschung

Virtual Hadron Therapy Center



Four carbon-ion cancer therapy centers in Europe

MedAustron, Austria



CNAO, Italy

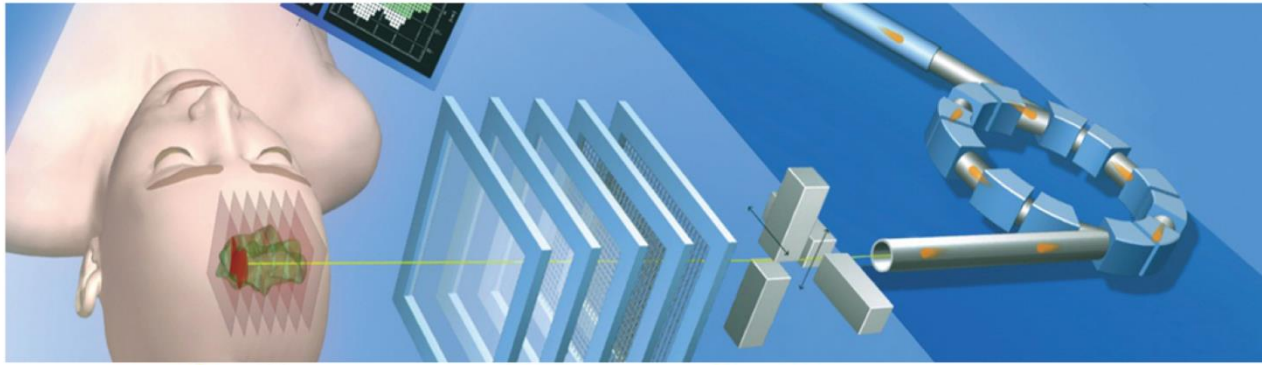


HIT, Germany



MIT, Germany











Particle Therapy Masterclass

Animations <https://indico.cern.ch/event/840212/page/18000-animations>

Research Institutes

	GSI/FAIR general science video, Courtesy of GSI
	CERN Video, Courtesy of CERN

Therapy Centres

	ENLIGHT Animations, Courtesy of ENLIGHT
	CNAO Video, Courtesy of CNAO
	HIT Video, Courtesy of HIT
	MedAustron Video, Courtesy of MedAustron MedAustron Behind the Scenes, Courtesy of MedAustron