



Particle therapy masterclass - Torino

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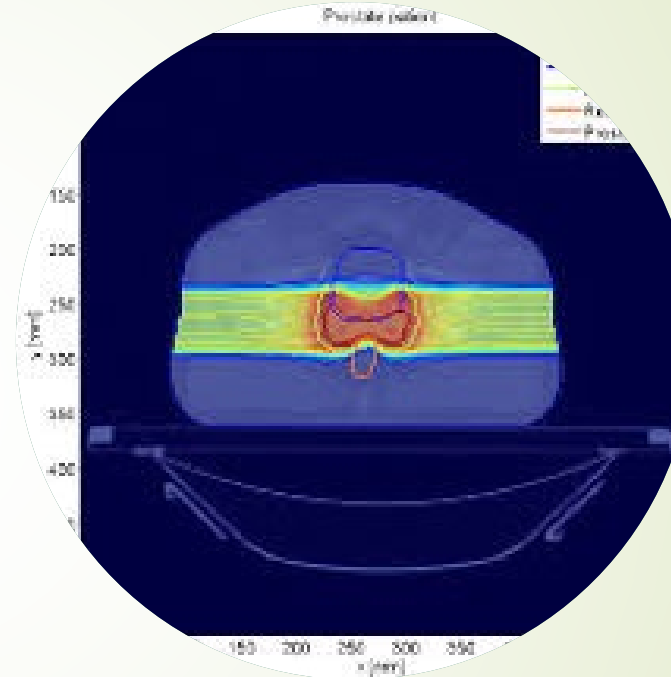
CITTA' della SALUTE e DELLA SCIENZA - AIFM

Elena gallio



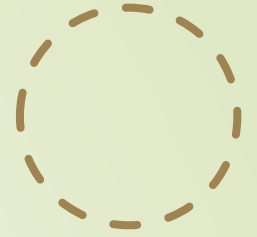
3 EXERCICES

- **BOXPHANTOM**
- **TG119**
- **PROSTATE**



BOX PHANTOM

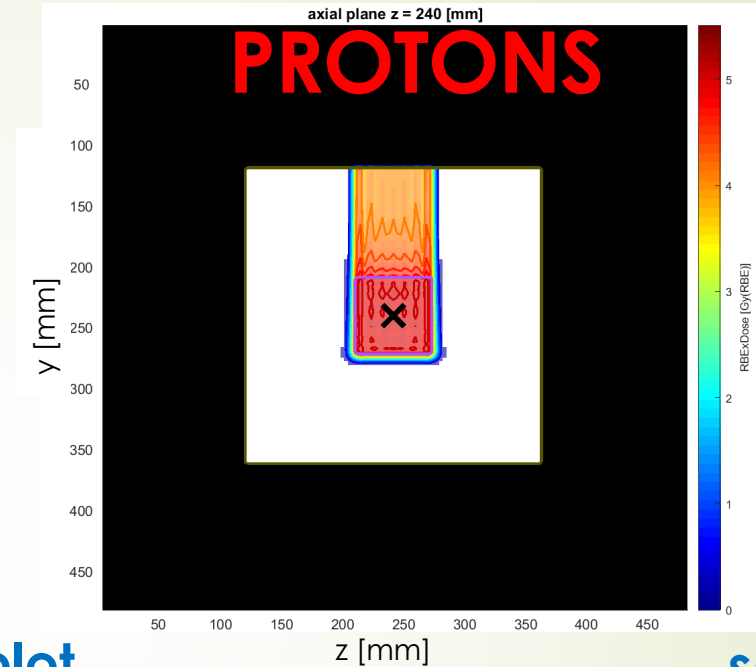
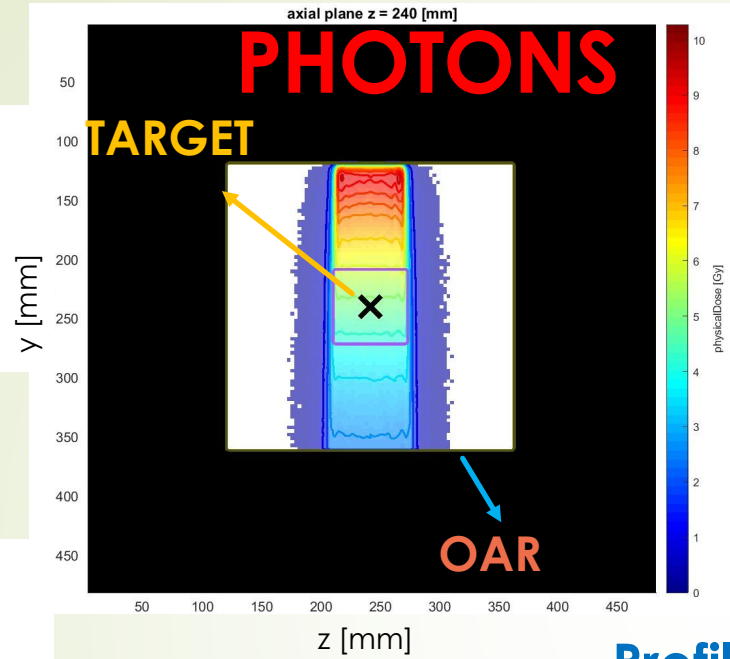
Dose distribution



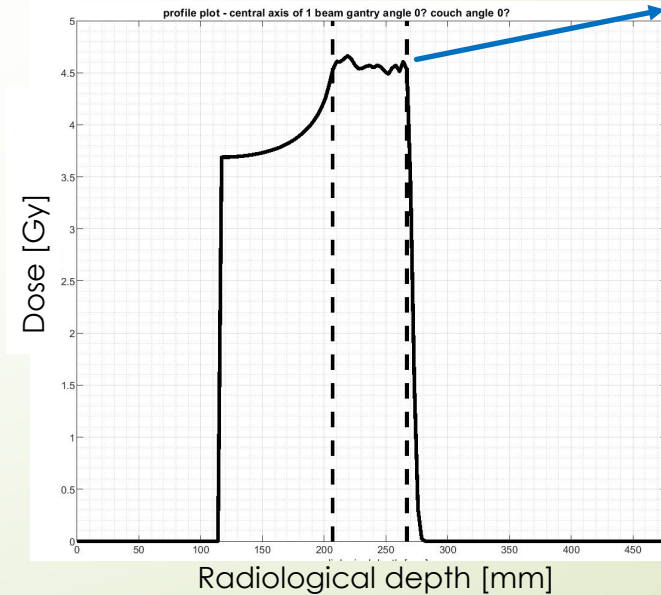
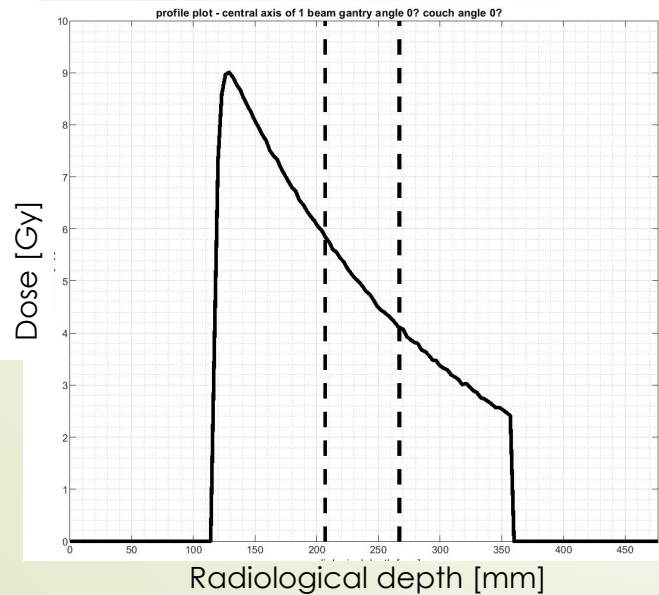
Gantry angles: 0°

Constraints:

- Dose to the **target** = 5 Gy
- Maximum dose to the **OAR** = 2 Gy



Profile plot



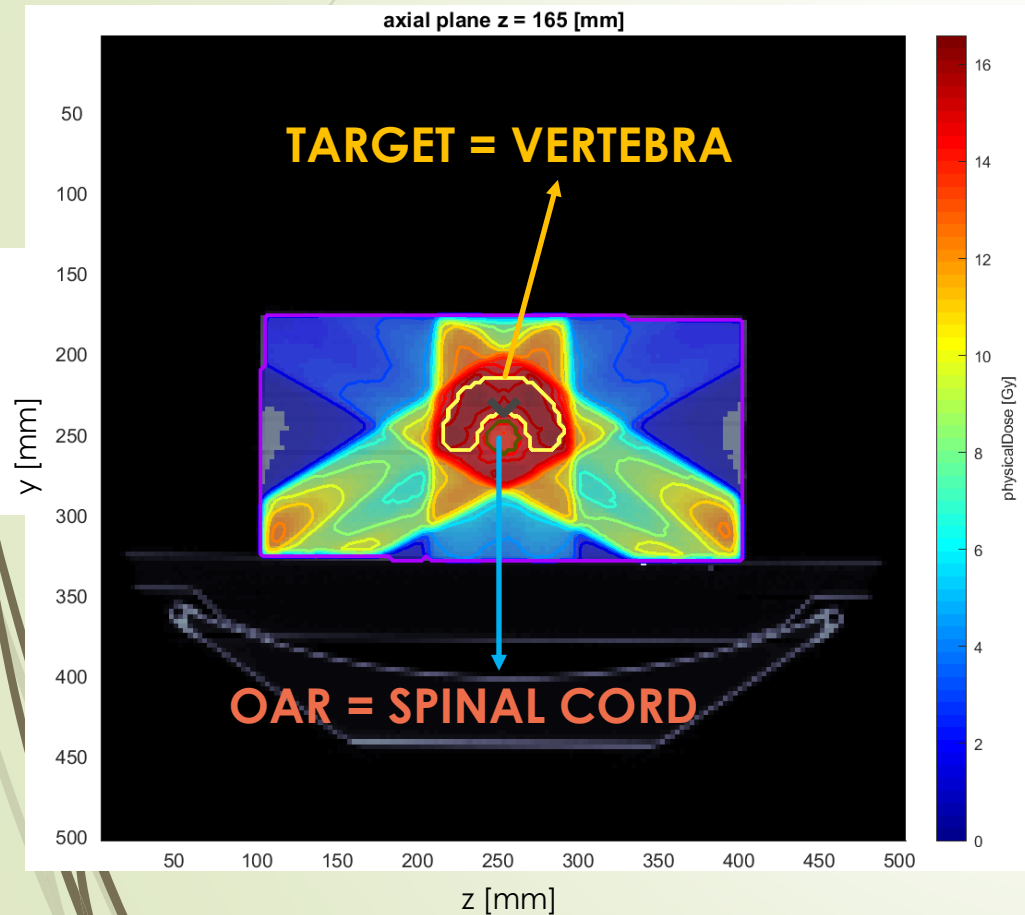
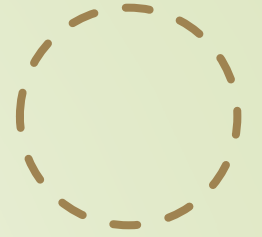
PHANTOM TG 119

Constraints:

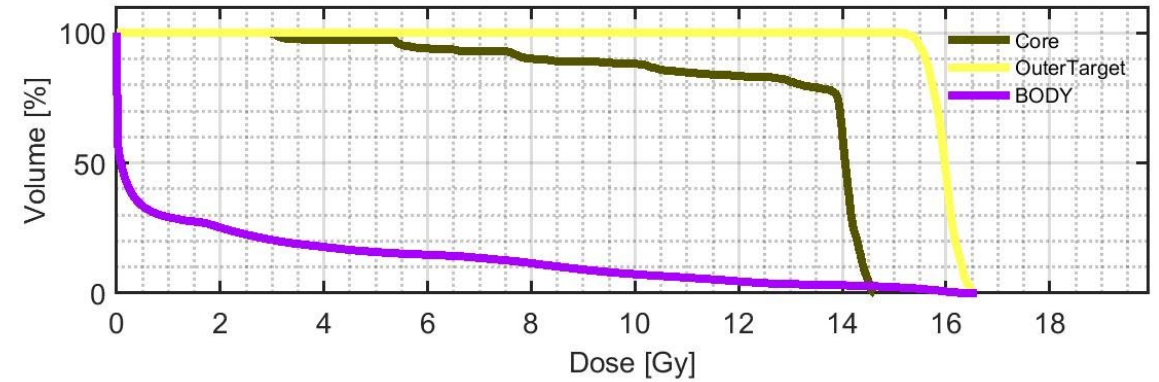
PHOTONS

Gantry angles: 0° - 120° - 240°

- Dose to the **target** = 16 Gy
- Maximum dose to the **OAR** = 14 Gy



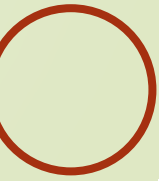
DVH



	max	min	mean	std
Core	14.6181	2.9539	12.9918	2.7044
OuterTarget	16.5965	15.0397	15.9609	0.2628
BODY	16.5965	0	2.0576	3.9062

X > 14 Gy

✓ ~ 16 Gy



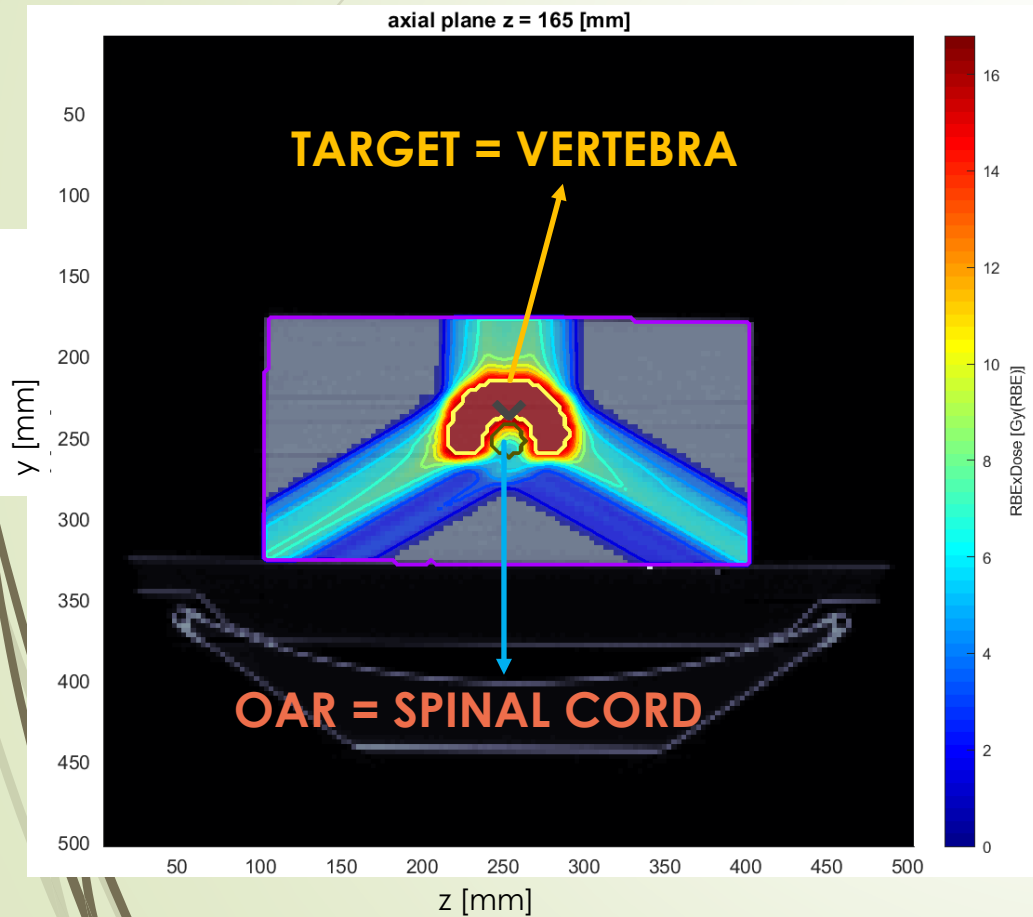
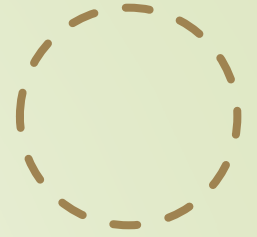
PHANTOM TG 119

Constraints:

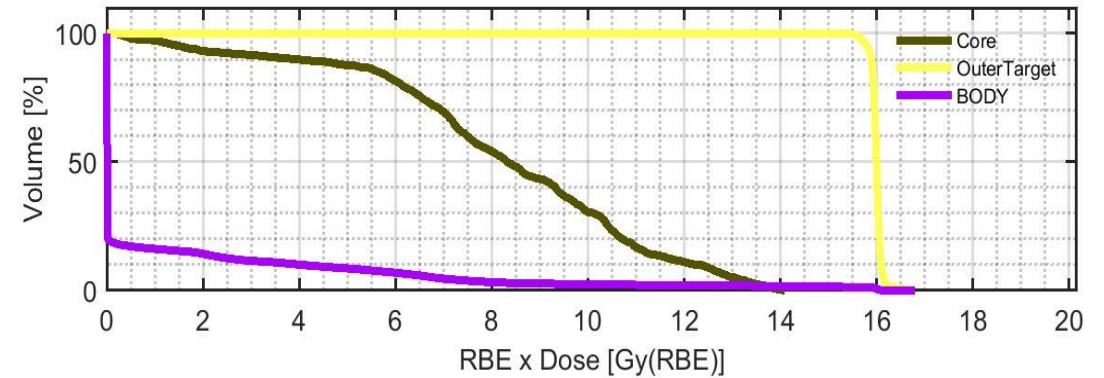
PROTONS

Gantry angles: 0° - 120° - 240°

- Dose to the **target** = 16 Gy
- Maximum dose to the **OAR** = 14 Gy



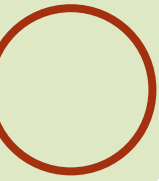
DVH



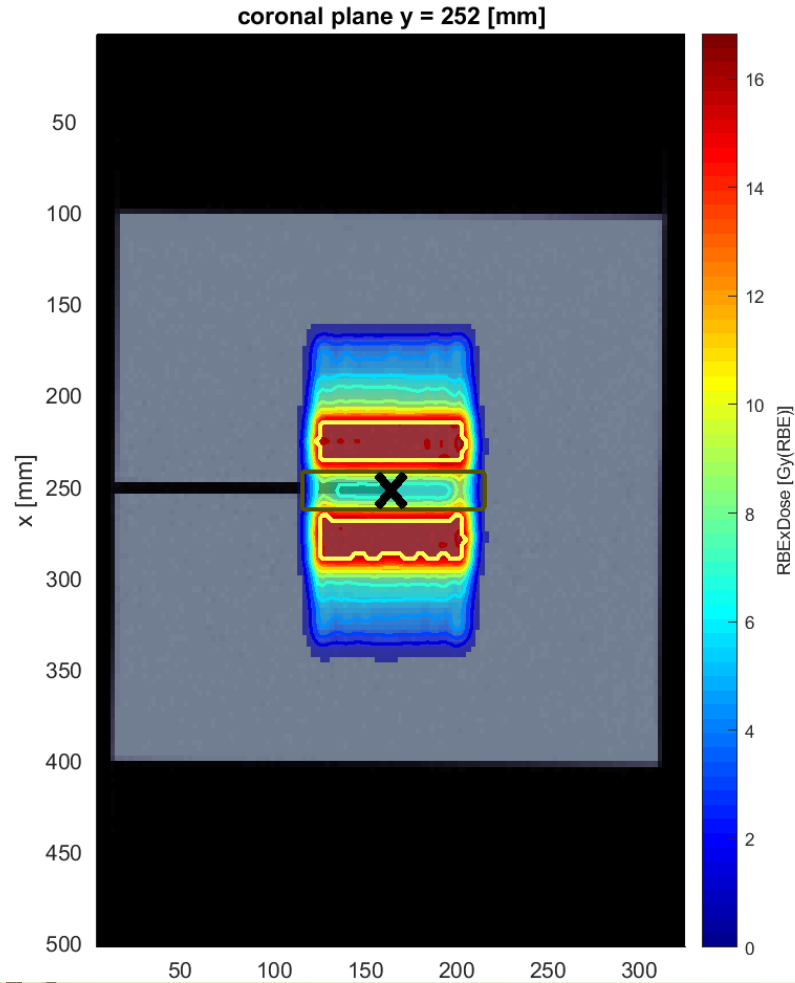
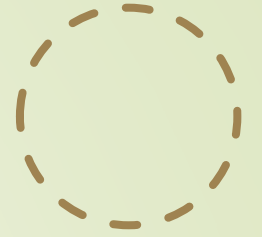
	max	min	mean	std
Core	14.0906	0.1866	8.2157	3.1204
OuterTarget	16.8031	15.2736	15.9921	0.1235
BODY	16.8031	0	0.9972	2.8002

✓ ~ 14 Gy

✓ ~ 16 Gy

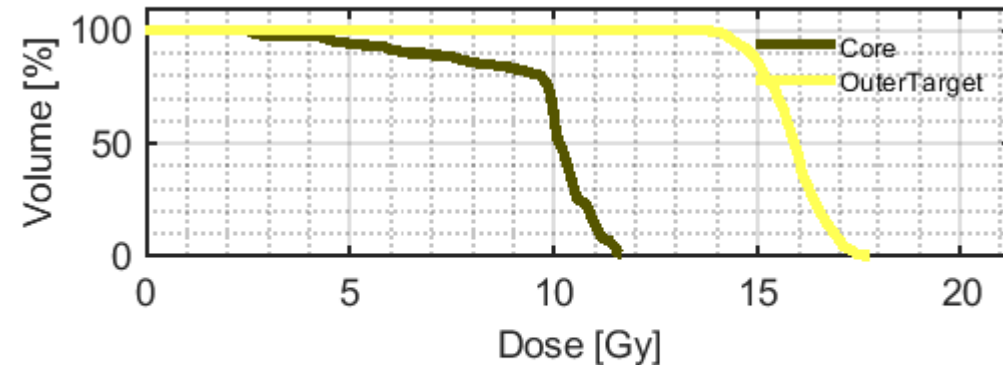


MINIMUM DOSE TO SPINAL CORD

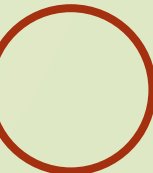


- Dose to the **target** = **16 Gy**
- Maximum dose to the **OAR** = **12 Gy**

Best optimization with max Dose OAR = 12 Gy



	mean	std	max	min	D
Core	9.6510	1.9433	11.6942	2.4038	
OuterTarget	15.8630	0.7759	17.7544	13.1765	



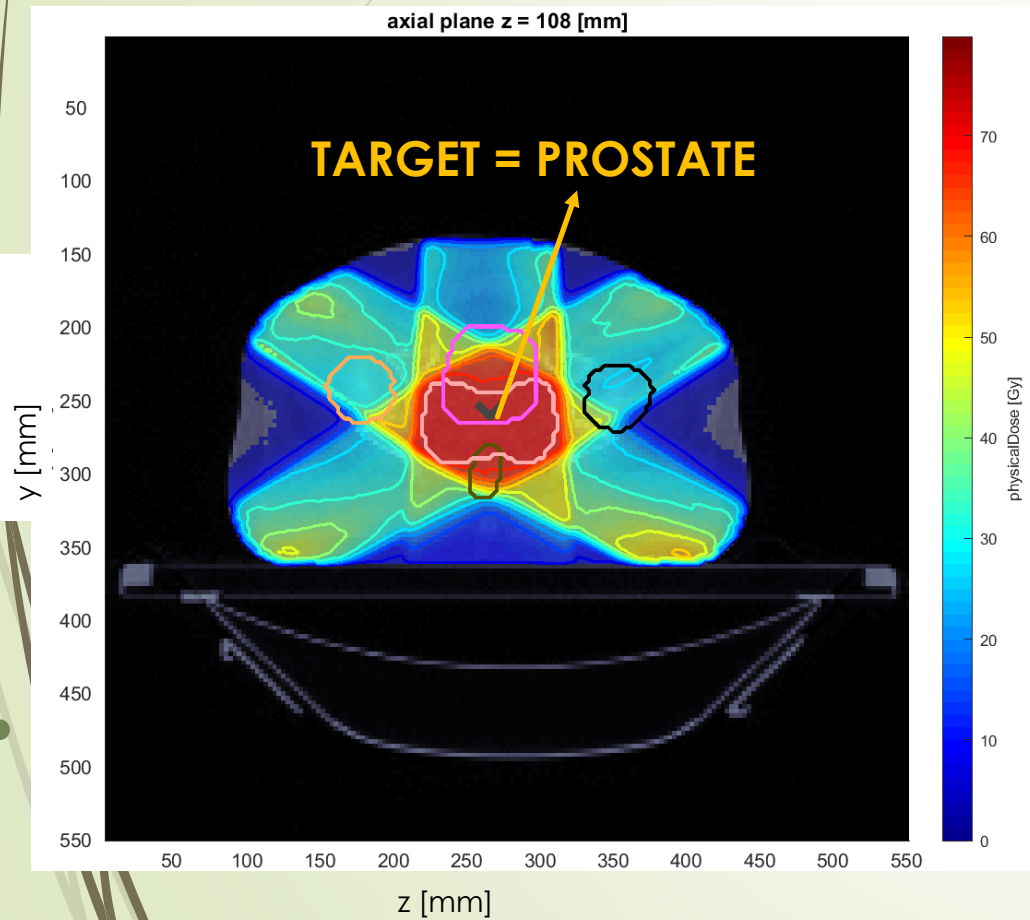
PROSTATE

Constraints:

- Dose to the **target** = 68 Gy

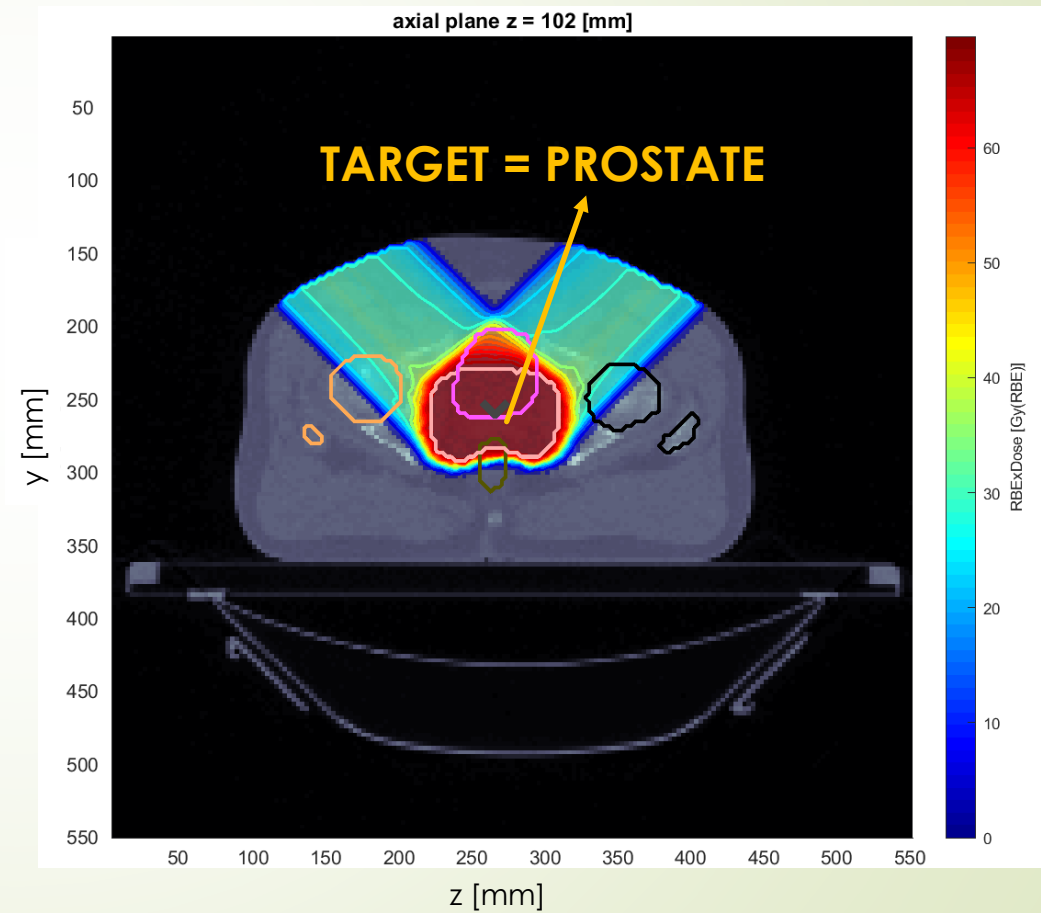
PHOTONS

Gantry angles: 0° - 60° - 120° - 240° - 300°



PROTONS

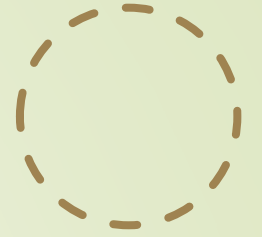
Gantry angles: 45° - 315°



PROSTATE

Constraints:

- Dose to the **target** = 68 Gy

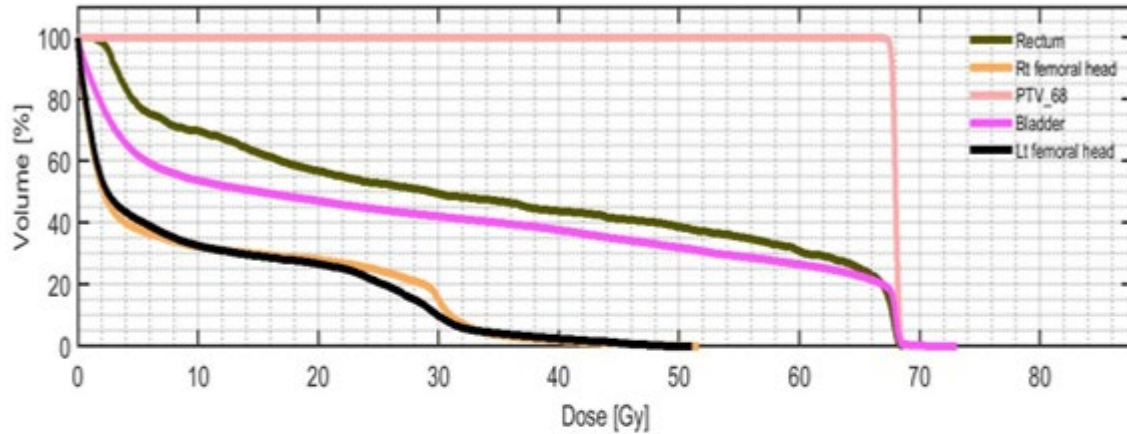


PHOTONS

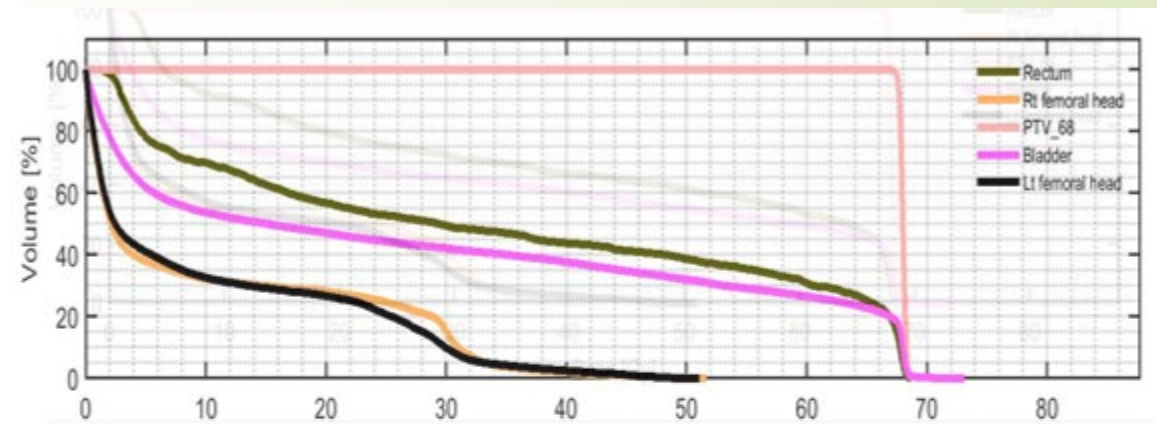
Gantry angles: 0° - 60° - 120° - 240° - 300°

PROTONS

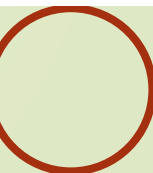
Gantry angles: 45° - 315°



	max	min	mean	std
Rectum	68.6380	1.1304	34.2486	26.4109
Rt femoral head	51.6354	0	10.4117	13.3191
PTV_68	68.9003	66.6443	67.9984	0.2314
Bladder	73.1400	0	28.4057	27.8499
Lt femoral head	51.1196	0	10.1726	12.7354



	max	min	mean	std
Rectum	68.6380	1.1304	34.2486	26.4109
Rt femoral head	51.6354	0	10.4117	13.3191
PTV_68	68.9003	66.6443	67.9984	0.2314
Bladder	73.1400	0	28.4057	27.8499
Lt femoral head	51.1196	0	10.1726	12.7354





SCHOOLS

Liceo Vasco Beccaria Govone
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IIS Copernico Luxemburg
Liceo scientifico Maria Curie
Edoardo Agnelli
L.S.GALILEO FERRARIS
Liceo Classico Vittorio Alfieri
Liceo Avogadro Biella
Liceo Augusto Monti di Chieri
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Convitto Nazionale Umberto I
Liceo Valsalice
Liceo Carlo Cattaneo
ITIS Amedeo Avogadro
I.S A.Einstein

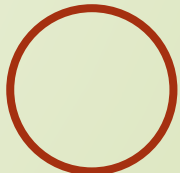


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Thank you for
your attention

