

Dosimetric Analysis Report

Date of irradiation: -
Phantom type: Prime
Phantom S/N: -
Treatment Planning System: Zap-X
Number of target volumes (PTVs): 3
Institution: -

Table of Contents

2D Absolute Dosimetry (Film)	2
PART I: <i>Profiles comparison</i>	2
PART II: <i>2D Gamma Index comparison</i>	10
PART III: <i>3D Gamma Index comparison</i>	18

2D Absolute Dosimetry (Film)

PART I: Profiles comparison

Indicatively, a number of absolute dose profiles for both the film-measured and TPS-calculated datasets are presented in the following figures.

Film 1 – Vertical – Sagittal orientation

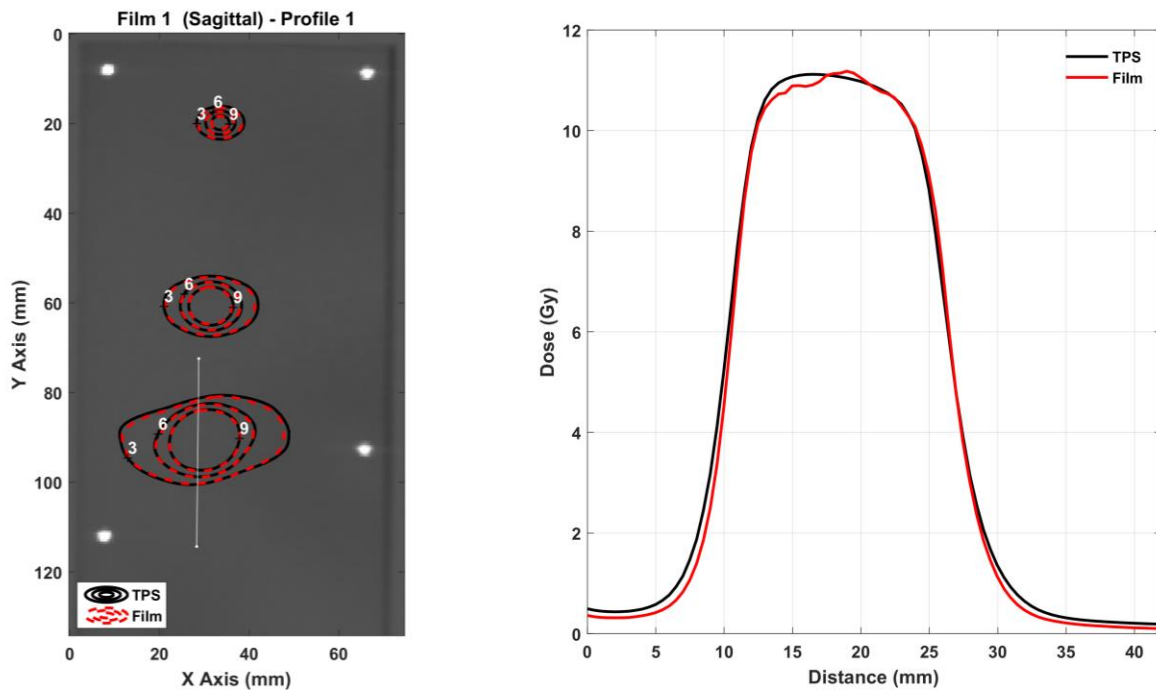
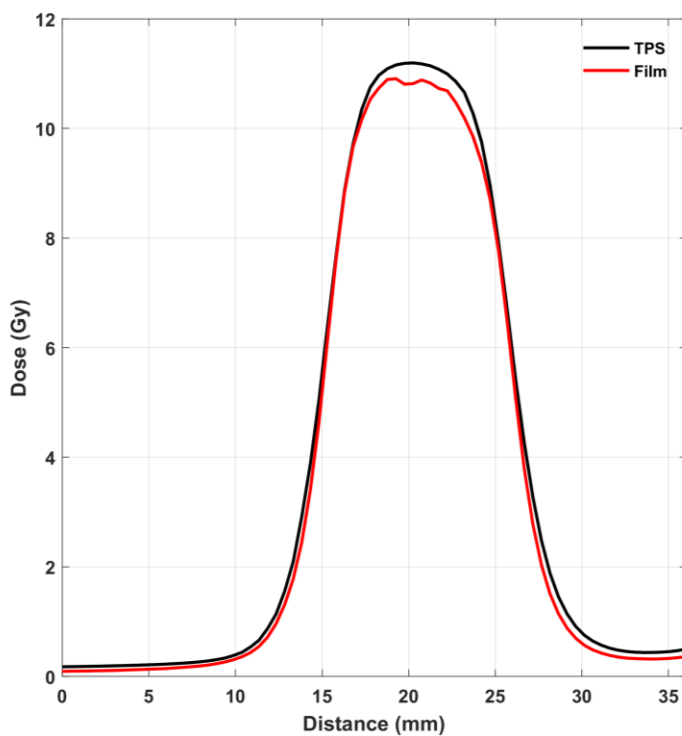
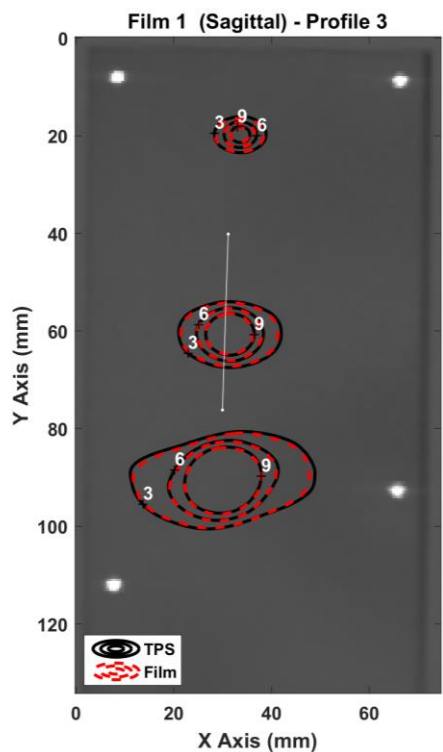
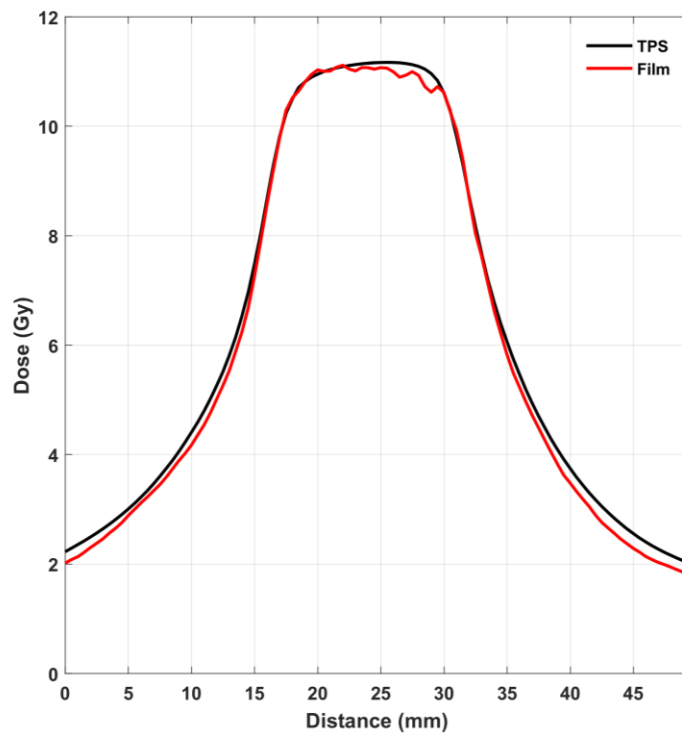
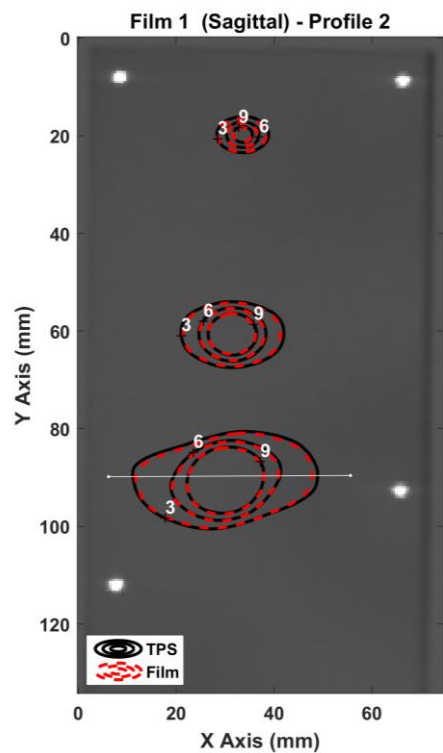
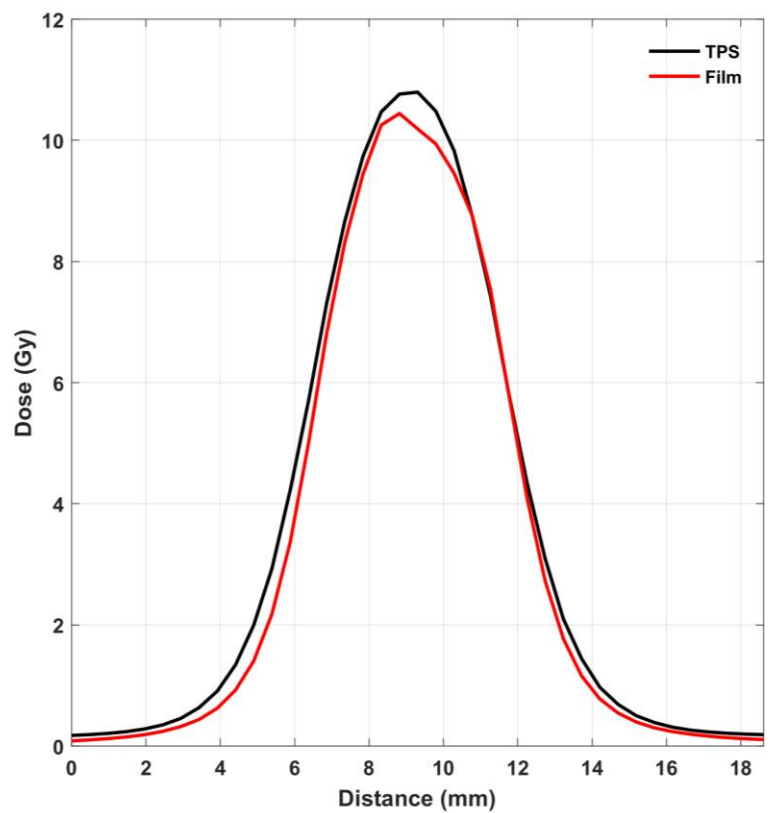
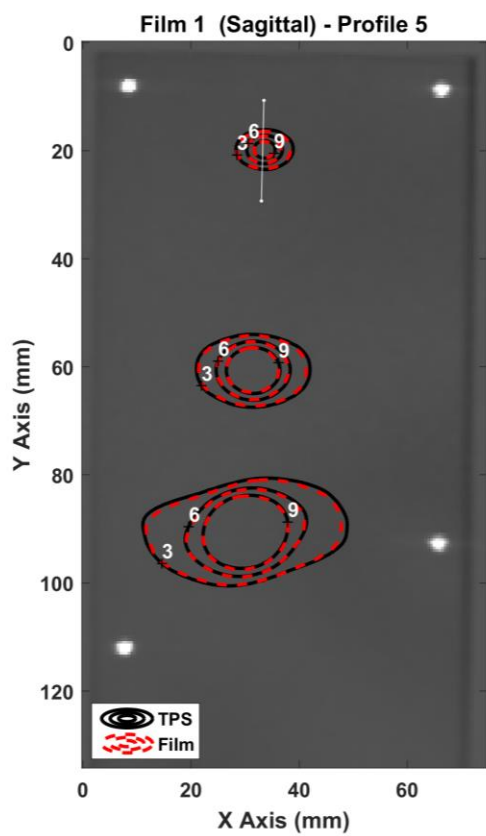
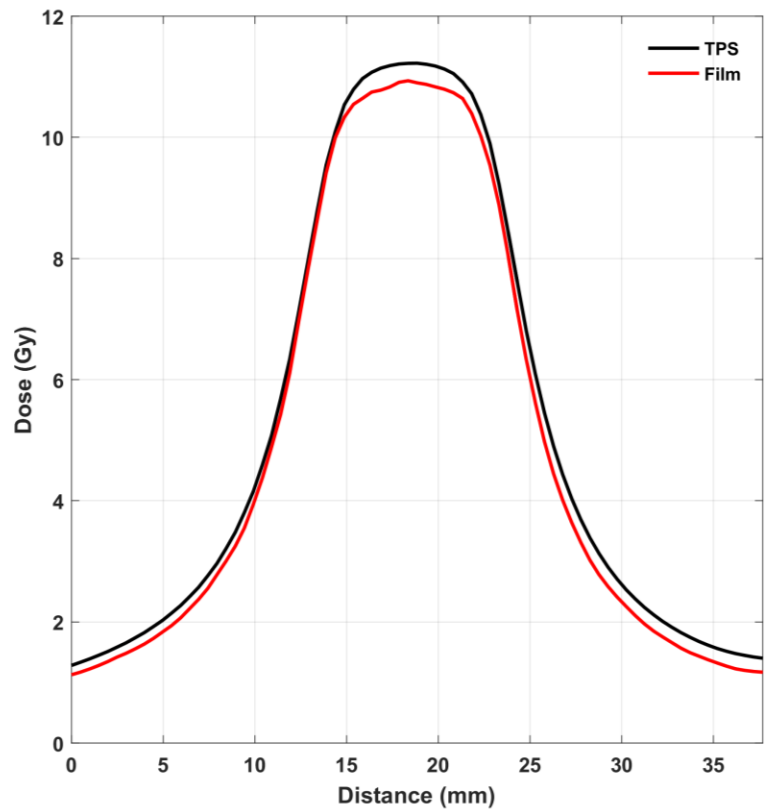
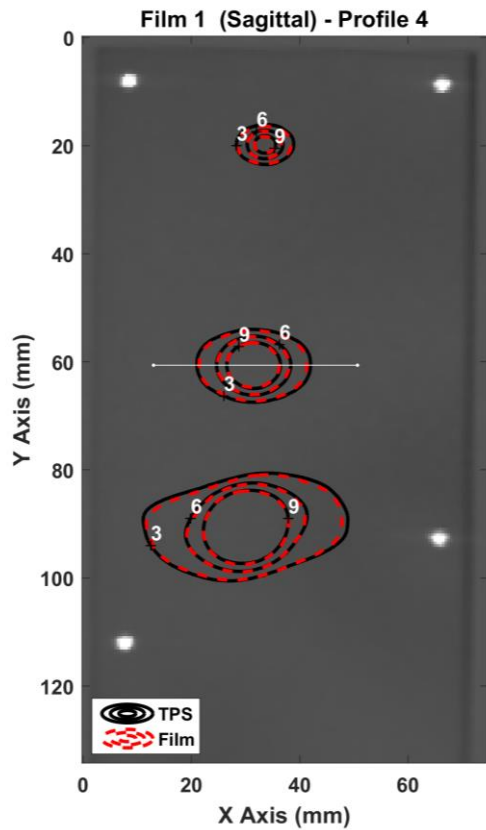
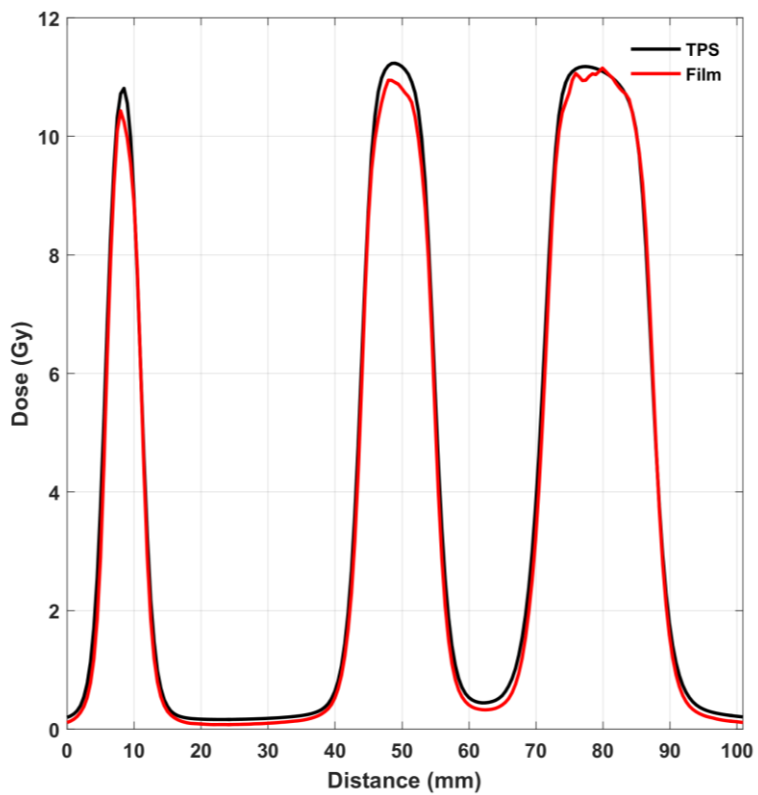
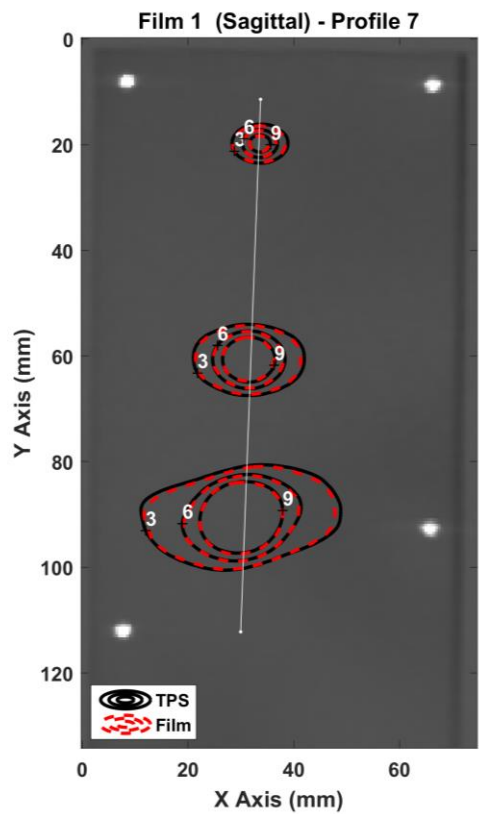
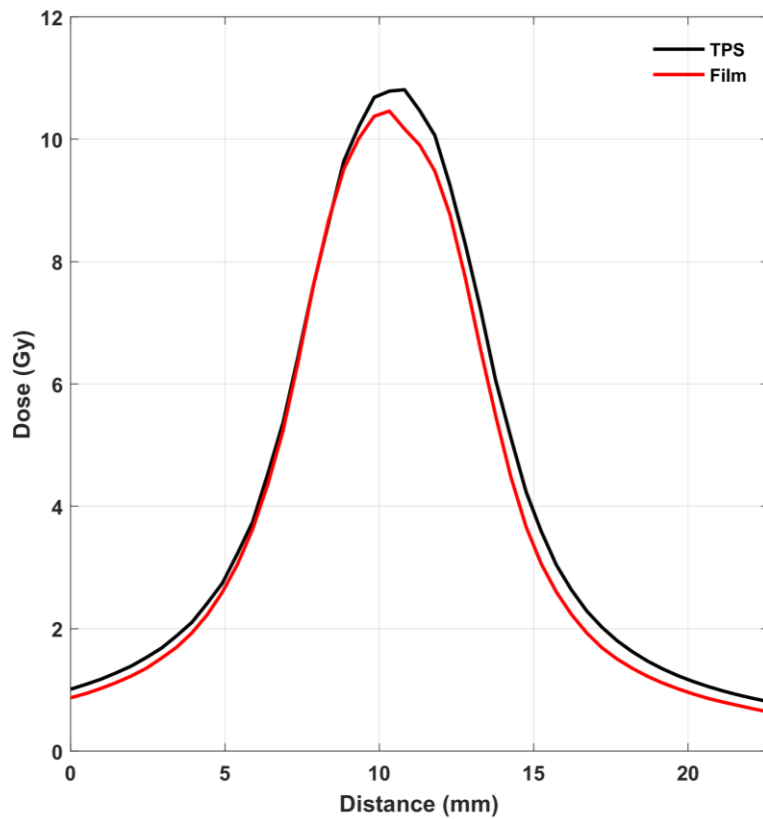
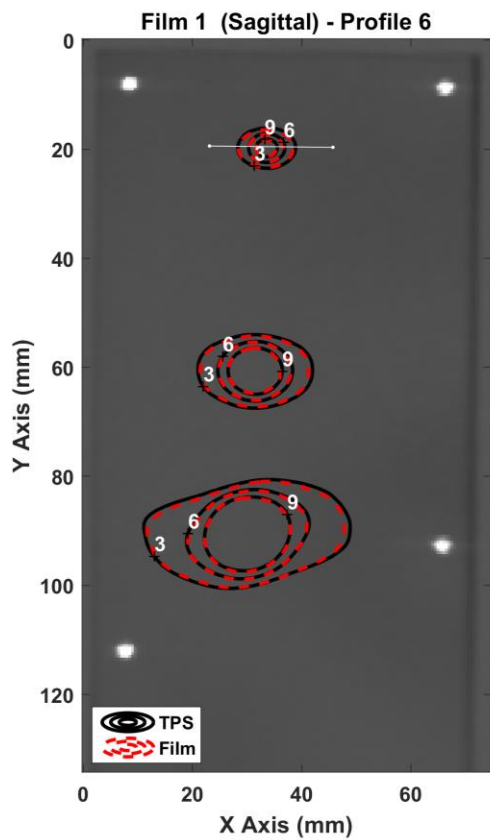


Figure: (left) Slice of the reconstructed CT scan of the film phantom. Contours correspond to TPS calculations (black solid lines) and film measurements (red dashed lines) in Gy. (right) 1D profile comparison between calculated (TPS) and measured (Film) dose distributions at the location depicted by the white line.

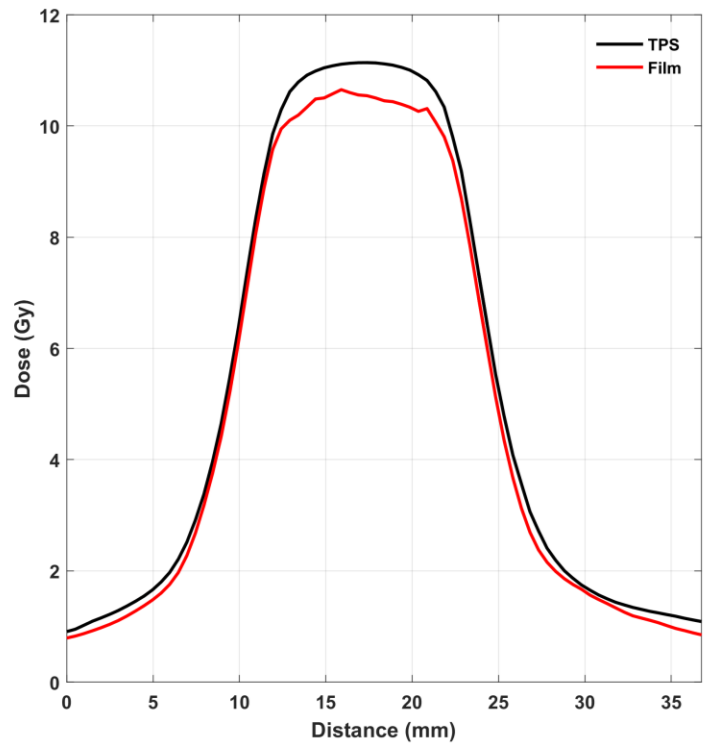
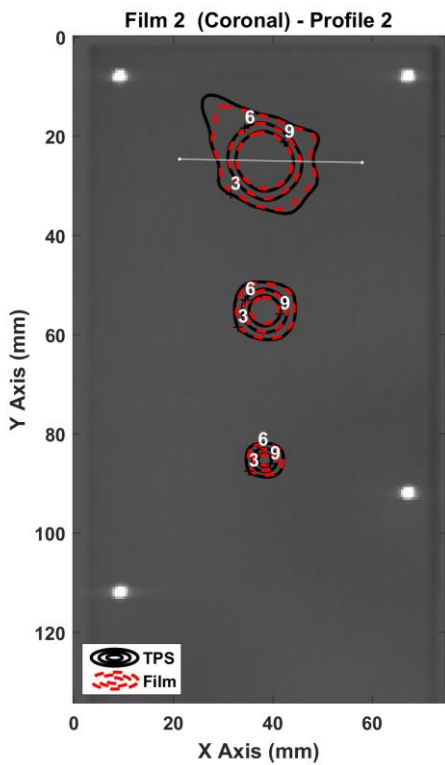
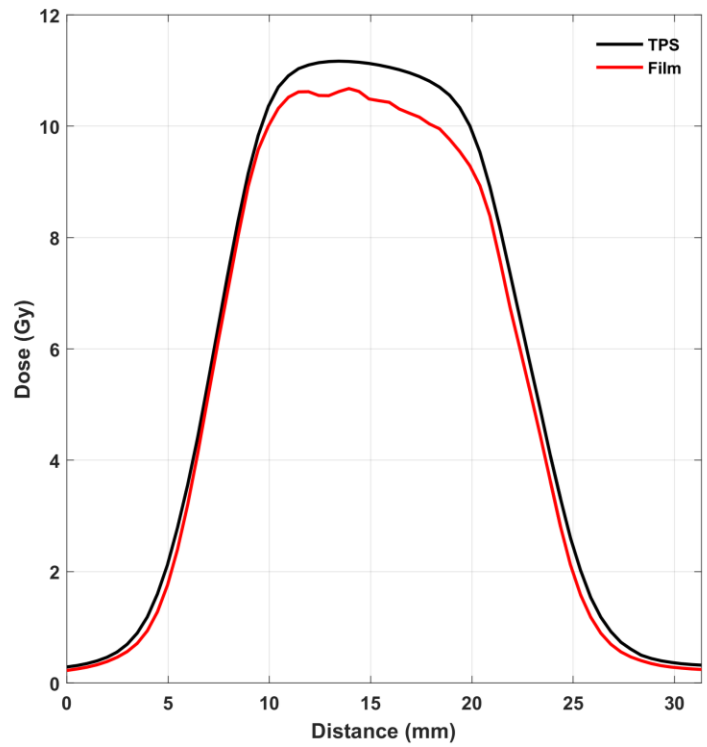
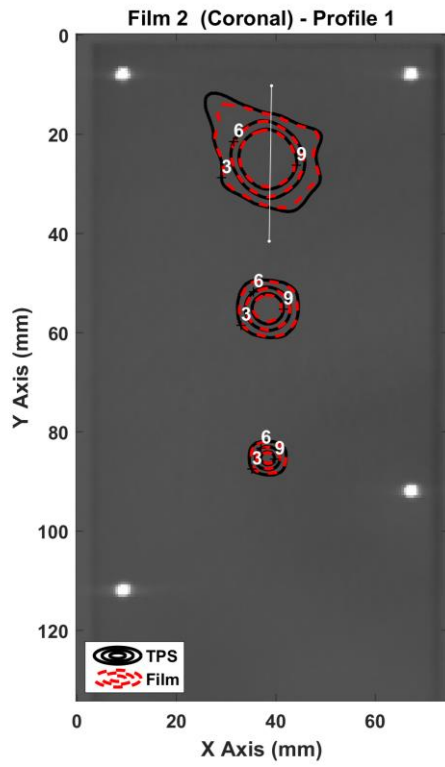
The same figure caption applies to all following figures in Part I.

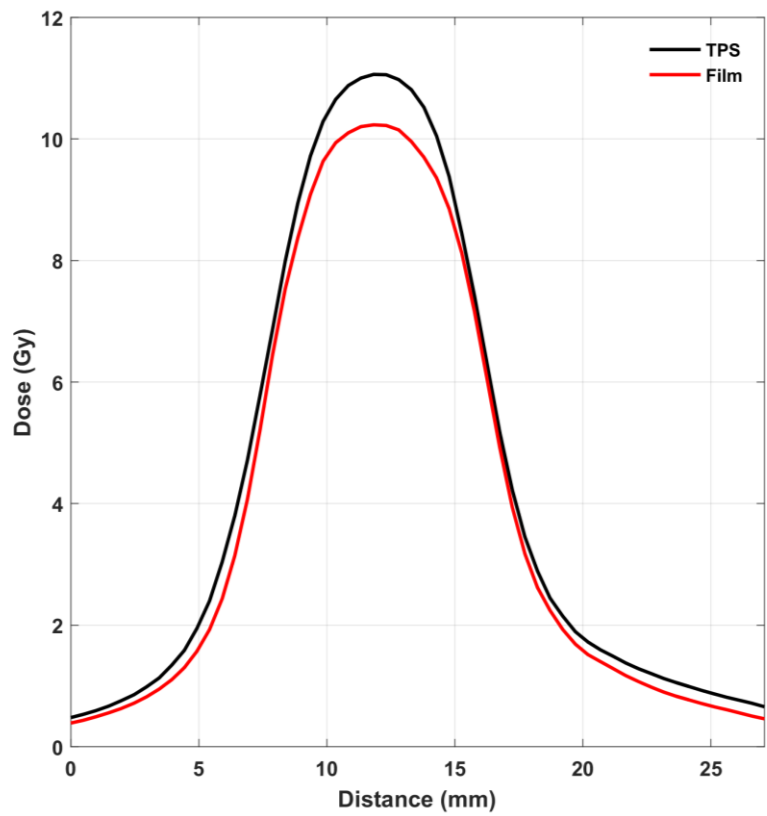
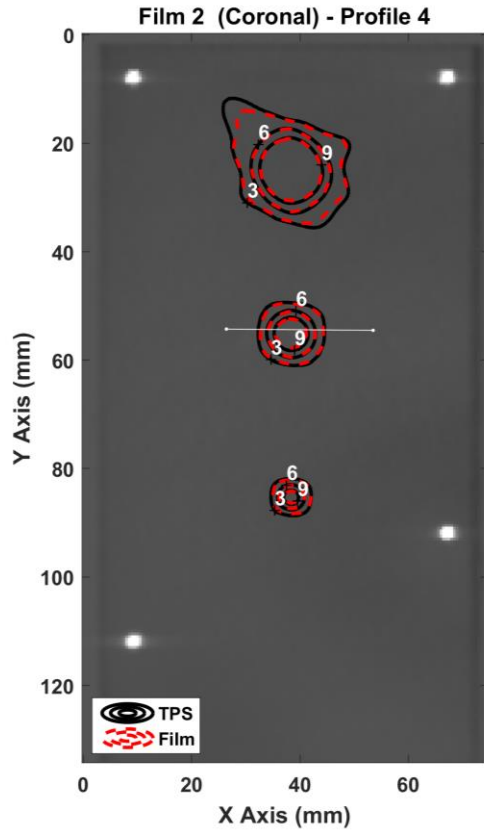
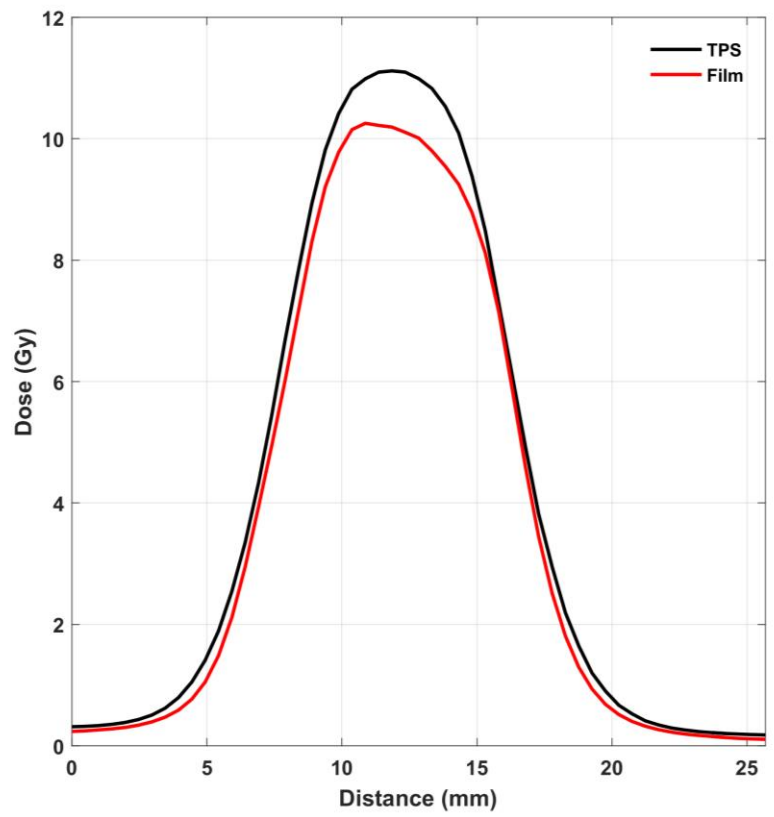
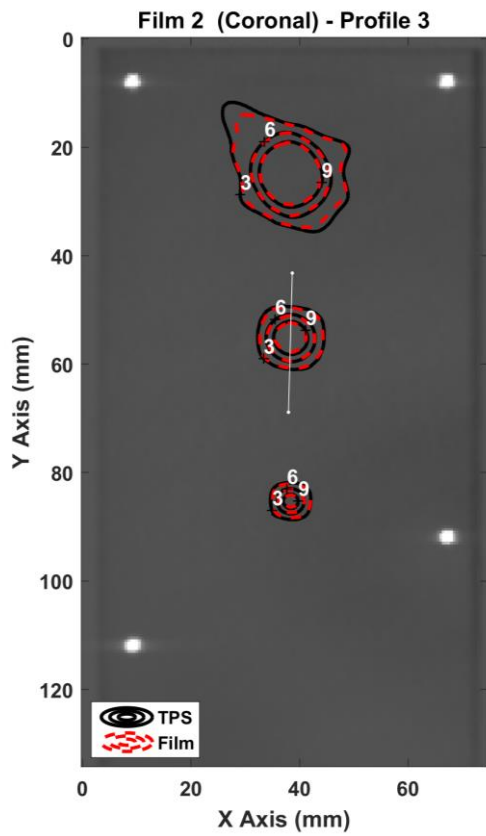


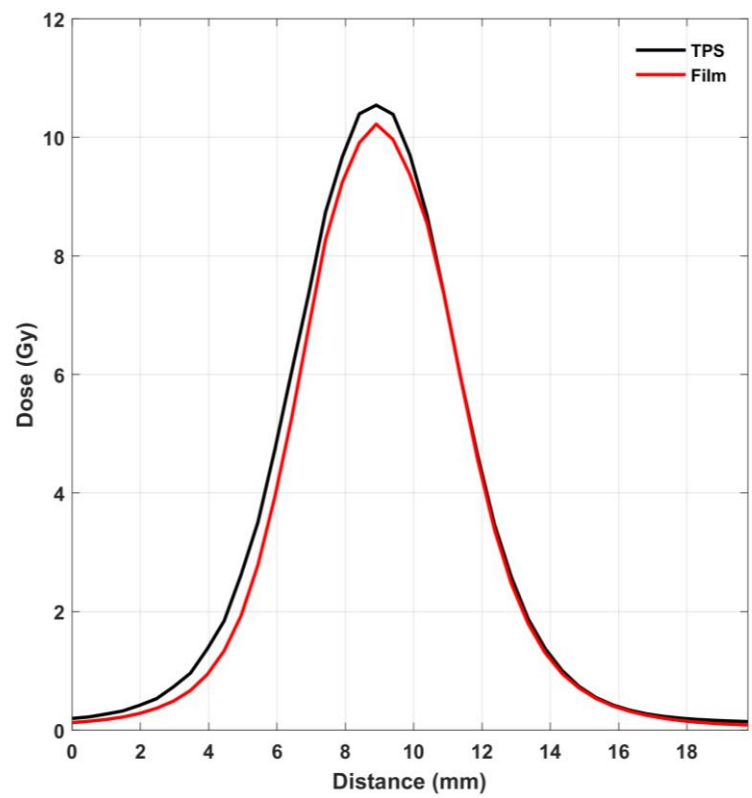
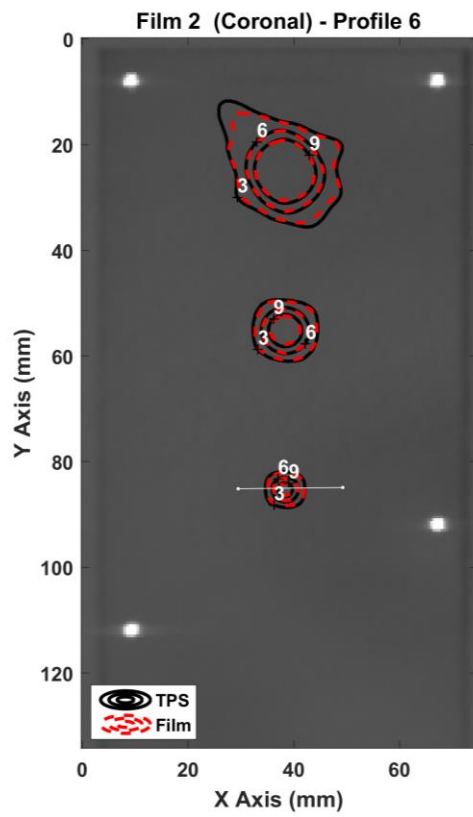
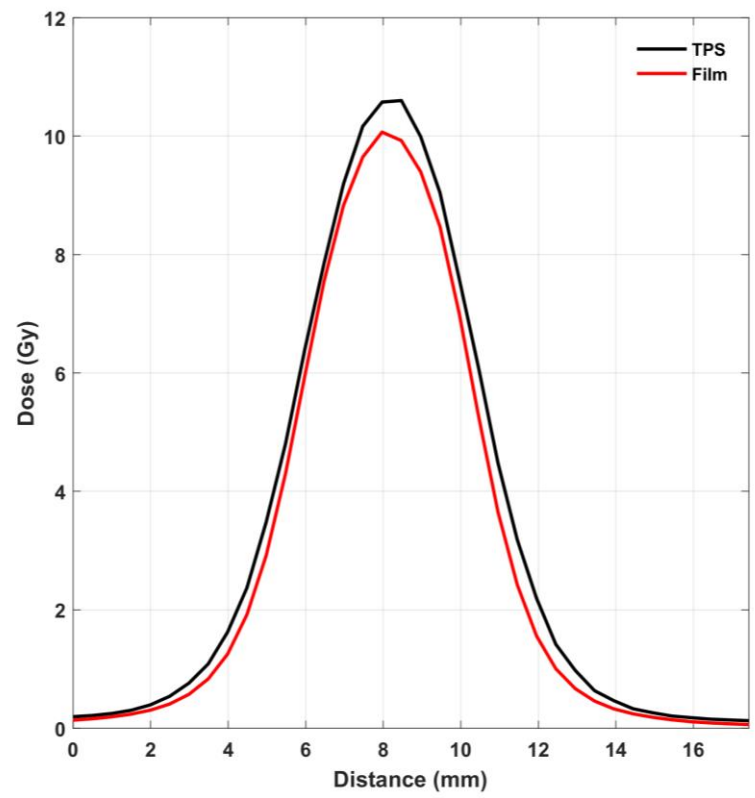
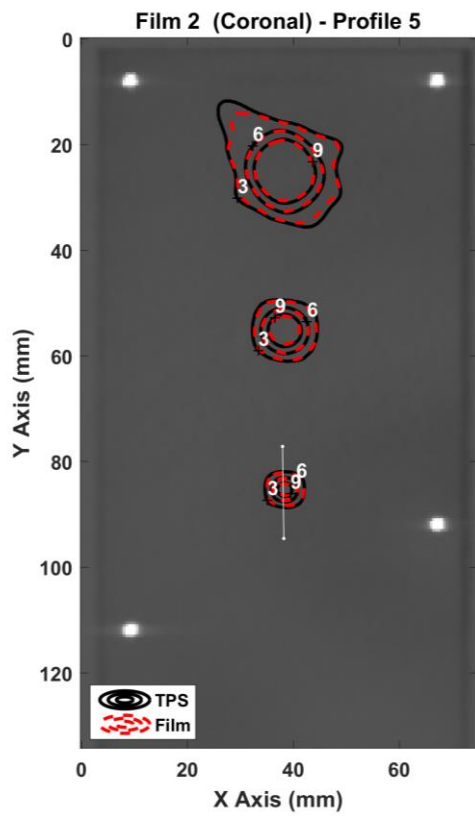


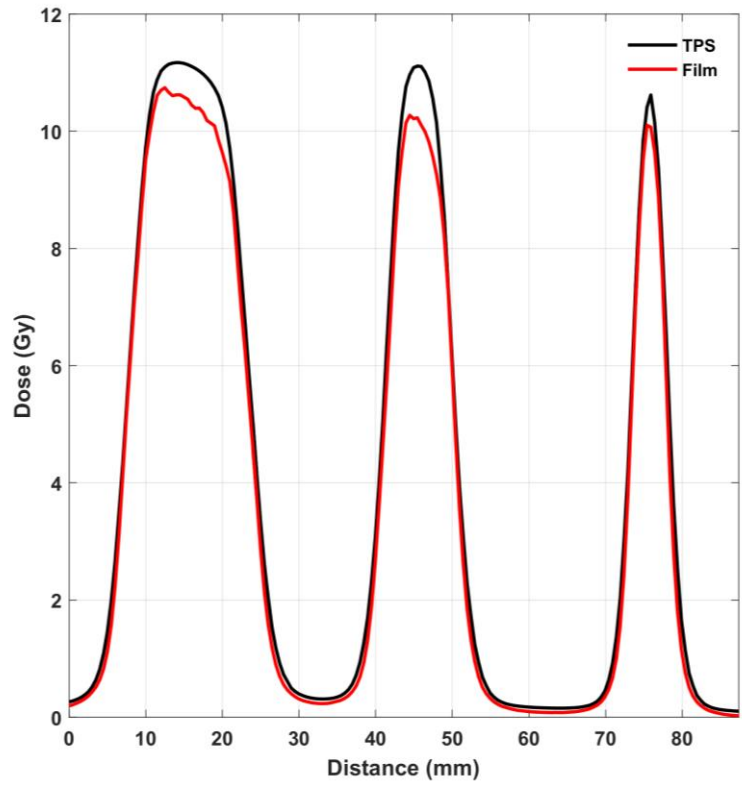
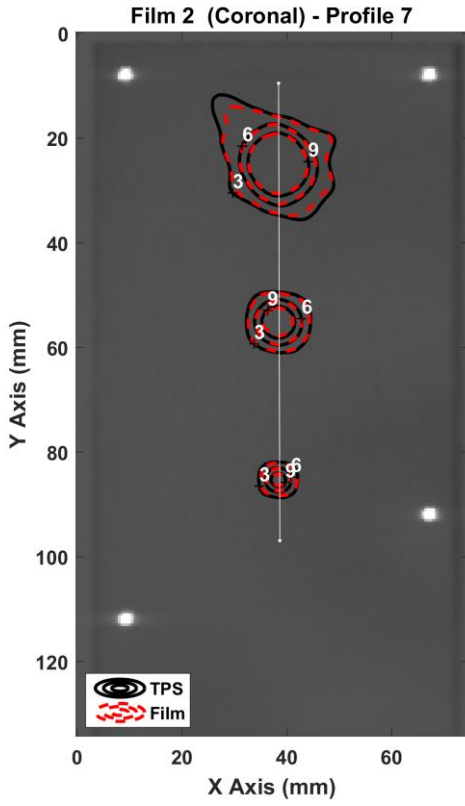


Film 2 – Horizontal – Coronal orientation









PART II: 2D Gamma Index comparison

For the slice between film insert slabs of the film phantom, 3D gamma index calculations (i.e., reference data: 2D film measurements, evaluated data: 3D TPS calculations) are presented in the following figures. Passing criteria were 3 mm distance-to-agreement and 3% dose difference, 2 mm and 3%, 1 mm and 3%, as well as 2 mm and 2%. However, a dose threshold of 10% of the maximum dose has been applied to exclude corresponding voxels from the gamma index calculations. Isodose lines are also plotted to assist comparison.

Film 1 –Vertical – Sagittal orientation

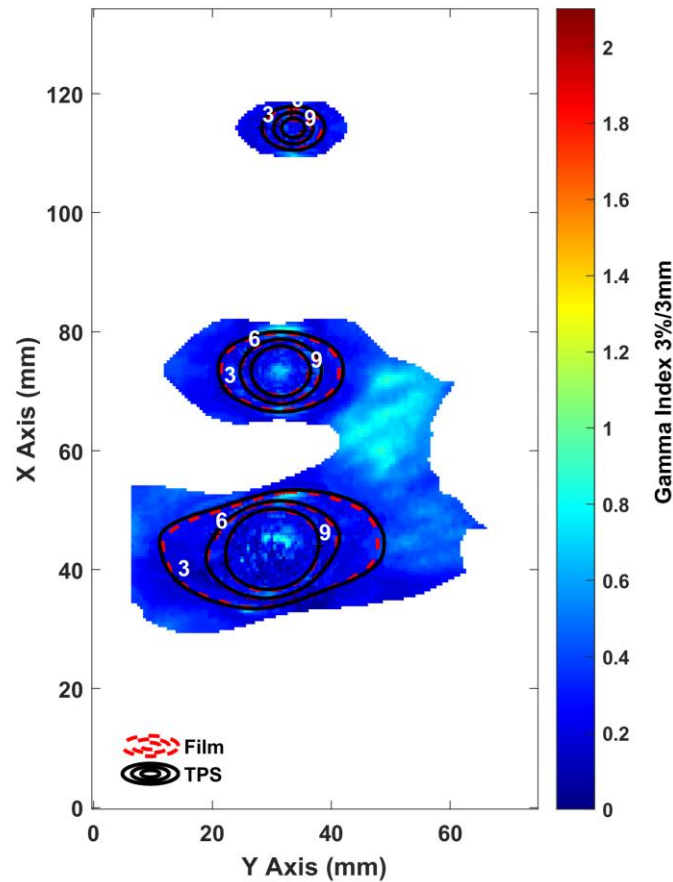


Figure: 2D comparison between calculated (TPS) and measured (Film) dose distributions in Gy values applying a 1Gy dose threshold. 3D gamma index calculations are given using passing criteria 3%/3mm.

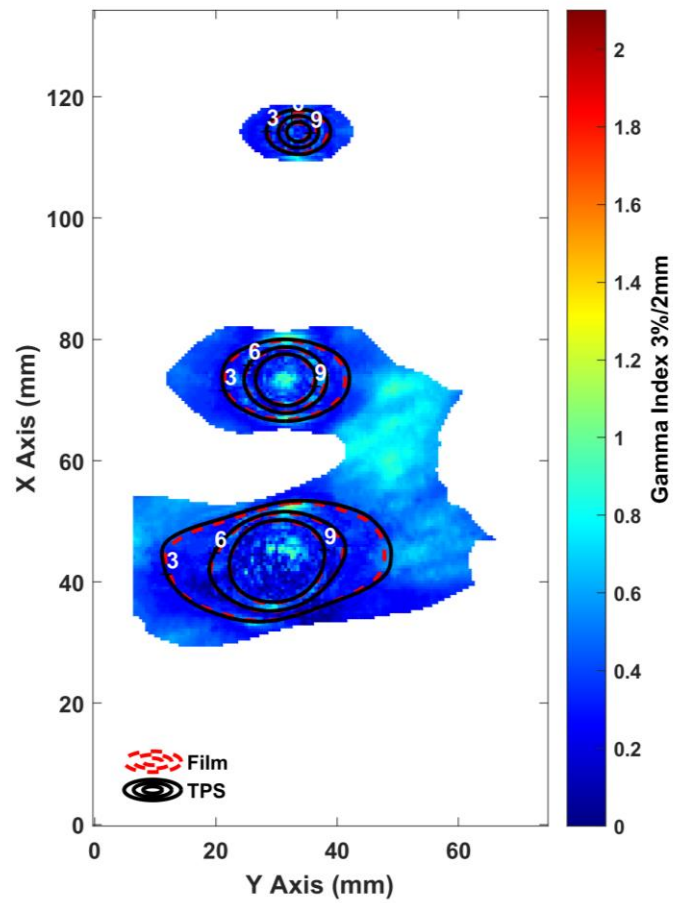


Figure: 2D comparison between calculated (TPS) and measured (Film) dose distributions in Gy values applying a 1Gy dose threshold. 3D gamma index calculations are given using passing criteria 3%/2mm.

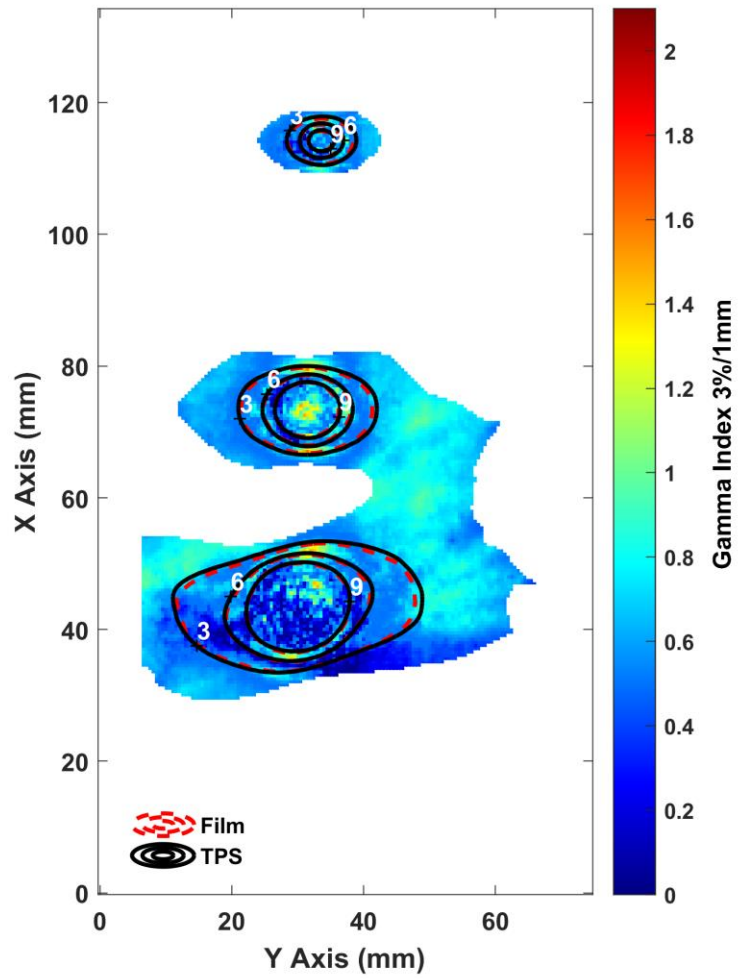


Figure: 2D comparison between calculated (TPS) and measured (Film) dose distributions in Gy values applying a 1Gy dose threshold. 3D gamma index calculations are given using passing criteria 3%/1mm.

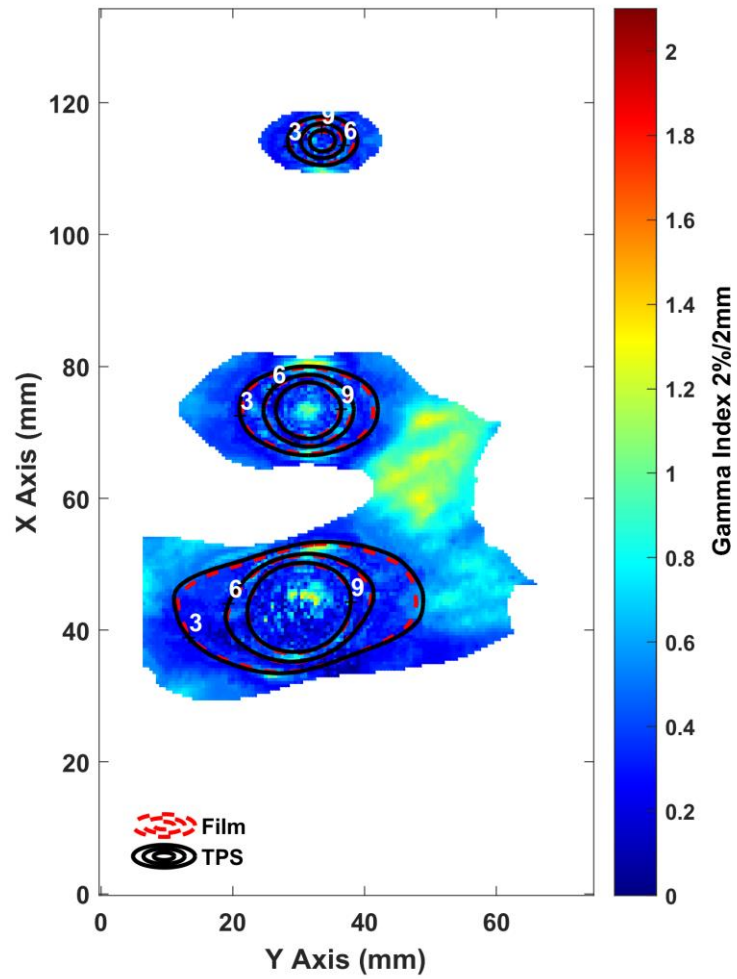


Figure: 2D comparison between calculated (TPS) and measured (Film) dose distributions in Gy values applying a 1Gy dose threshold. 3D gamma index calculations are given using passing criteria 2%/2mm.

Film 2 – Horizontal – Coronal orientation

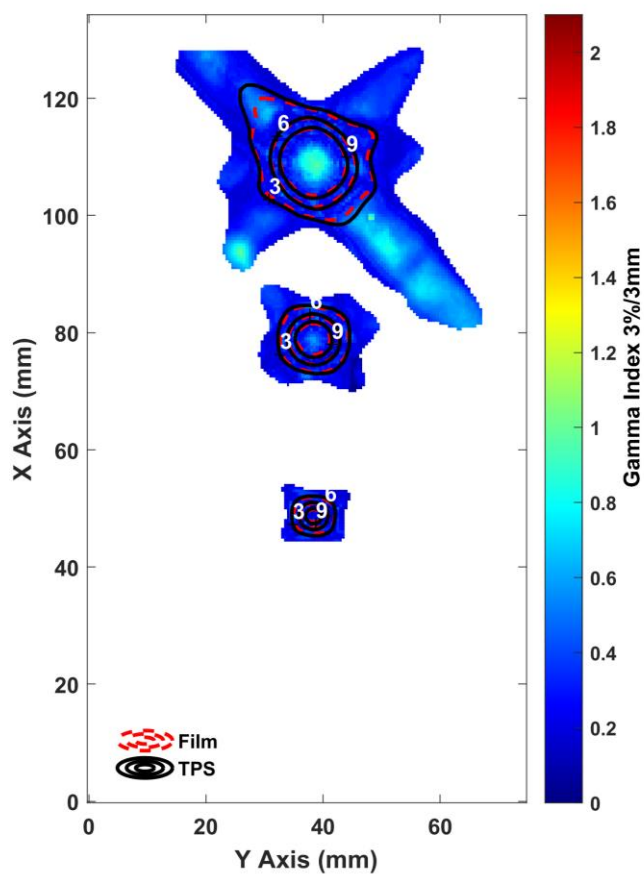


Figure: 2D comparison between calculated (TPS) and measured (Film) dose distributions in Gy values applying a 1Gy dose threshold. 3D gamma index calculations are given using passing criteria 3%/3mm.

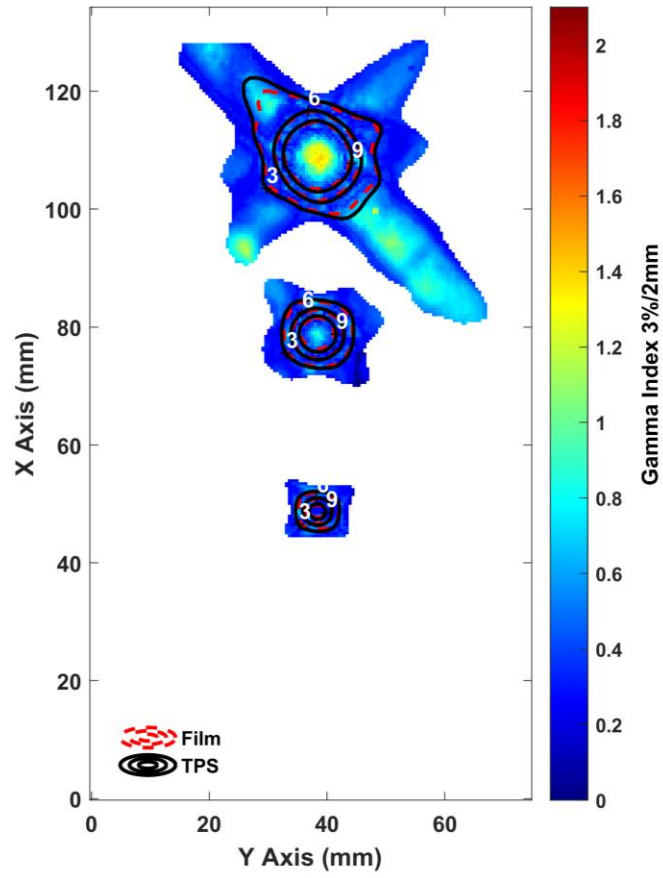


Figure: 2D comparison between calculated (TPS) and measured (Film) dose distributions in Gy values applying a 1Gy dose threshold. 3D gamma index calculations are given using passing criteria 3%/2mm.

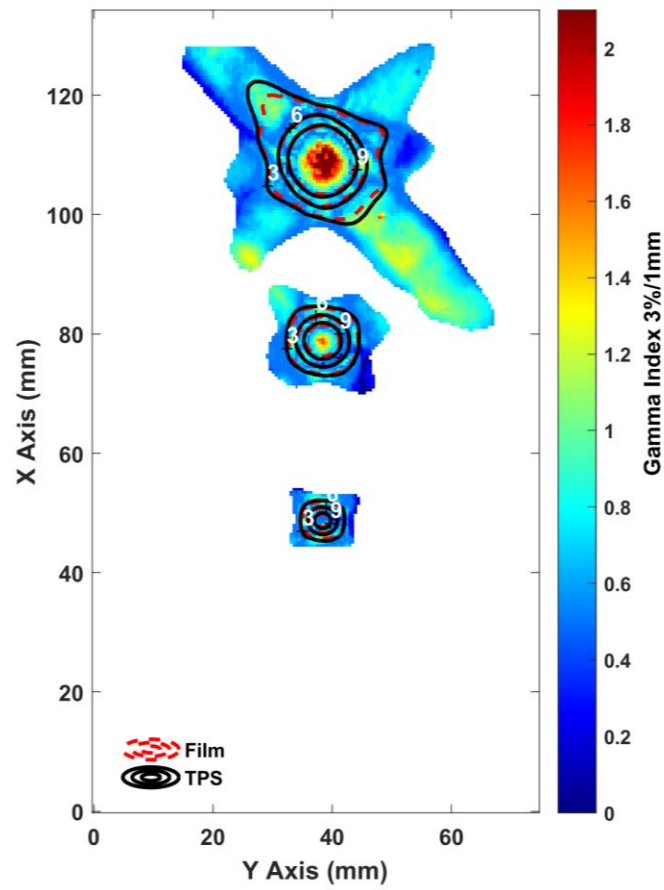


Figure: 2D comparison between calculated (TPS) and measured (Film) dose distributions in Gy values applying a 1Gy dose threshold. 3D gamma index calculations are given using passing criteria 3%/1mm.

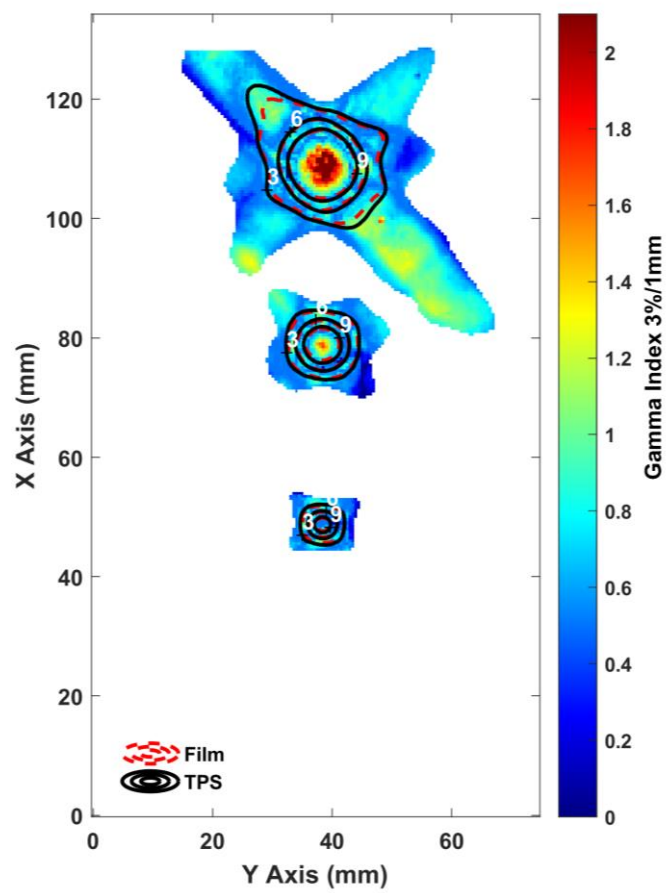


Figure: 2D comparison between calculated (TPS) and measured (Film) dose distributions in Gy values applying a 1Gy dose threshold. 3D gamma index calculations are given using passing criteria 2%/2mm.

PART III: 3D Gamma Index comparison

Gamma index calculations were also performed in 3D using a variety of passing criteria and a low-dose cut off threshold of 1Gy. Corresponding results are summarized in the following table.

Table: Results for the 3D gamma index test of Film 1 in sagittal orientation (Vertical), comparing film-measured (reference) with the TPS-calculated (evaluated) dose distributions using a variety of passing criteria. Note that passing rates were calculated using a threshold of 1Gy.

Structure	Passing criteria		Passing Rate
	DTA (mm)	DD (%)	GI ≤ 1 (%)
Targets	3	3	100
	2	3	99.82
	1	3	98.02
	2	2	93.88

Table: Results for the 3D gamma index test of Film 2 in coronal orientation (Horizontal), comparing film-measured (reference) with the TPS-calculated (evaluated) dose distributions using a variety of passing criteria. Note that passing rates were calculated using a threshold of 1Gy.

Structure	Passing criteria		Passing Rate
	DTA (mm)	DD (%)	GI ≤ 1 (%)
Targets	3	3	99.97
	2	3	98.17
	1	3	87.86
	2	2	95.64

Disclaimer

Results presented in this report were deduced based on an experimental procedure performed by the end-user following the guidelines of RTsafe staff. Results are provided “as is”. No warranties, express or implied, that these results are free of error, or is consistent with any particular standard of merchantability, or that it will meet your requirements for any particular application, is made. No responsibility for any physical or technical limitations of the procedures and functions which make up this experimental methodology is accepted. The presented dosimetric report should not be relied on for solving a problem whose incorrect solution could result in injury to a person or loss of property. RTsafe shall not, in any event, be liable for any damages, whether direct or indirect, special or general, consequential or incidental, arising from the use of the results of this report. RTsafe does not suggest any specific actions for improving your radiotherapy treatment protocol. The interpretation of the presented results is entirely at your own risk.