Charite Epp. Tube & Backscattering
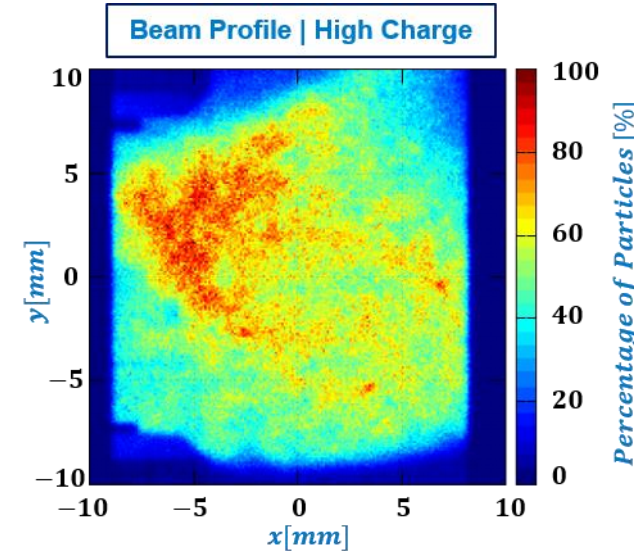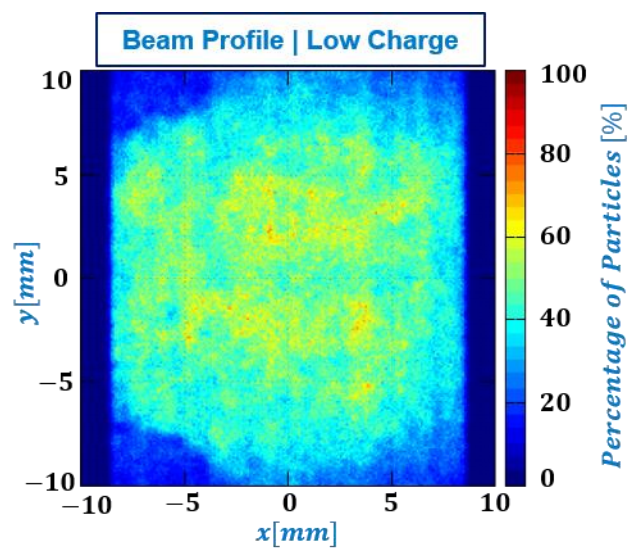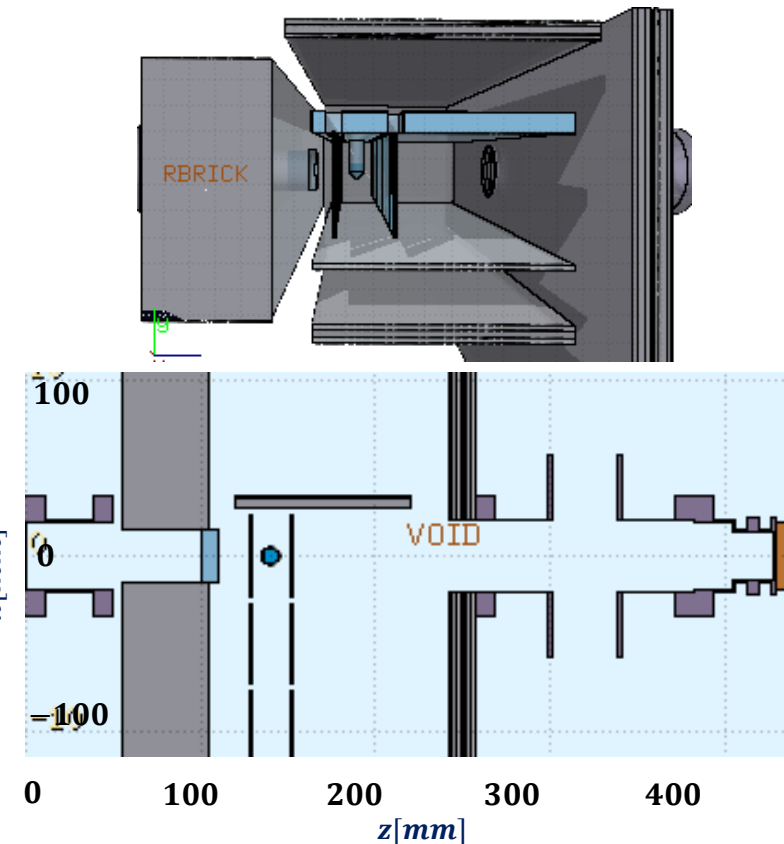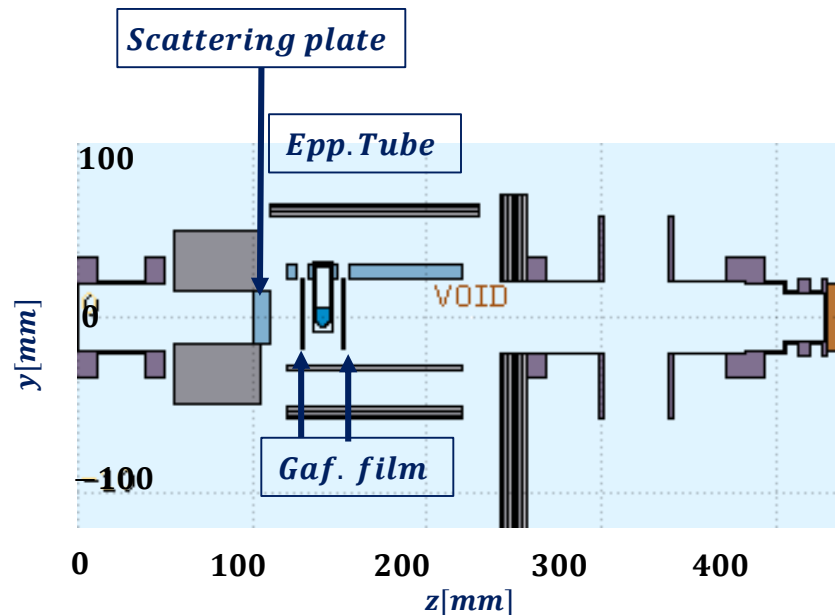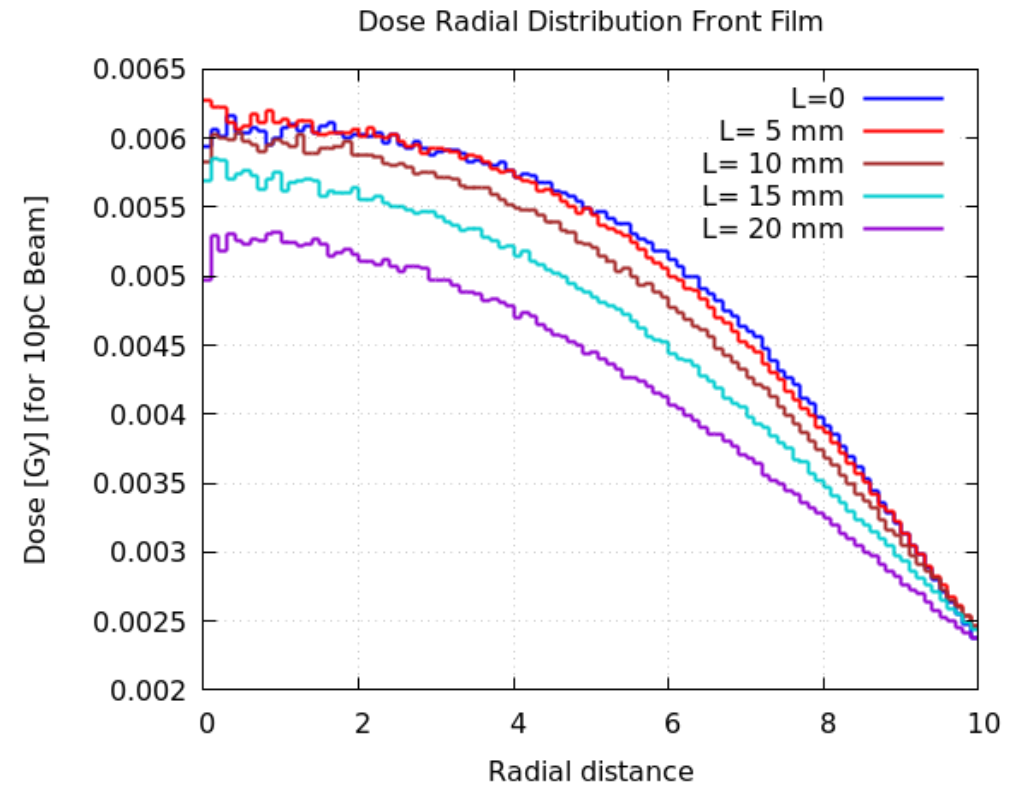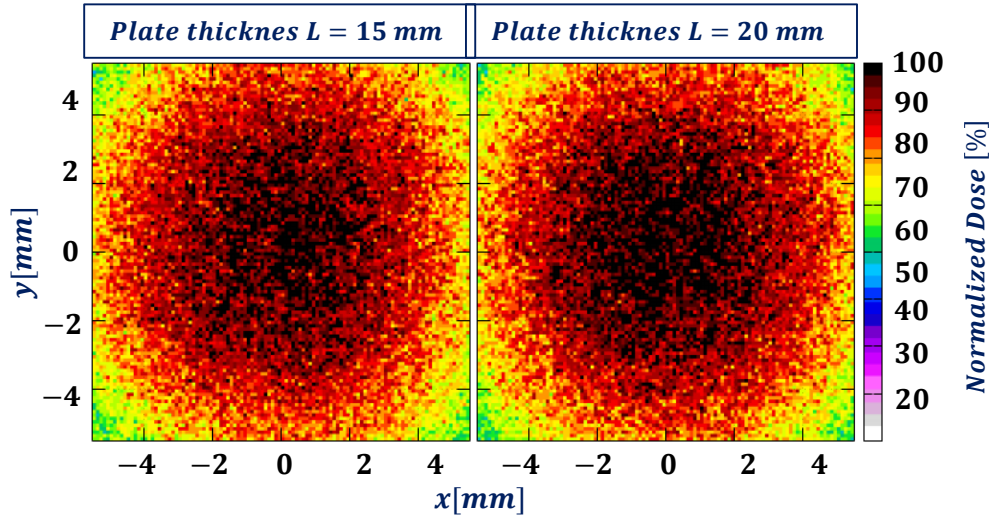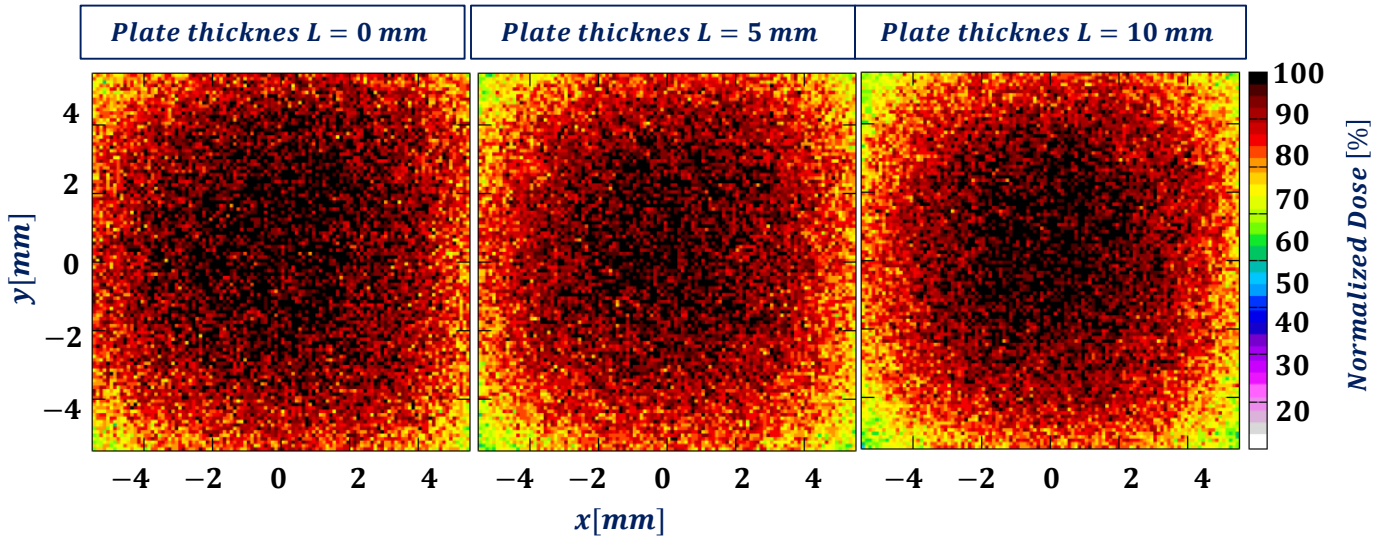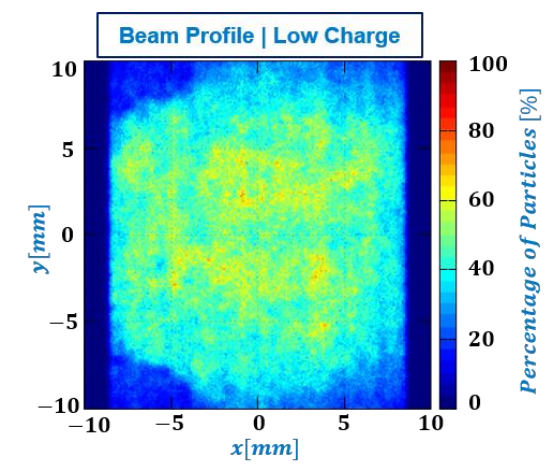
Zohrab Amirkhanyan

Simulation Setup

Schematic representation

Geometry setting:

- Lead brick with

  - a thick of **50 mm**.

  - a **hole** diameter of **30 mm**.

- Distance from window to

  - **Gaf. film** is **150 mm**.

  - **FC** is **430 mm**

- **Scattering plate:**
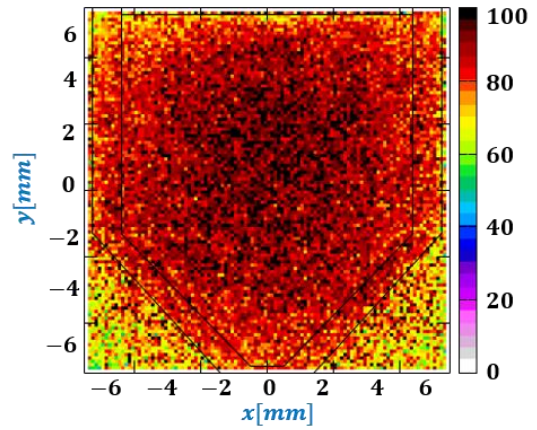
  - **Various thicknesses from 0 to 20mm**

Dose profile at front film

Plate thicknes L = 0 mm

Plate thicknes L = 5 mm

Plate thicknes L = 10 mm

Plate thicknes L = 15 mm

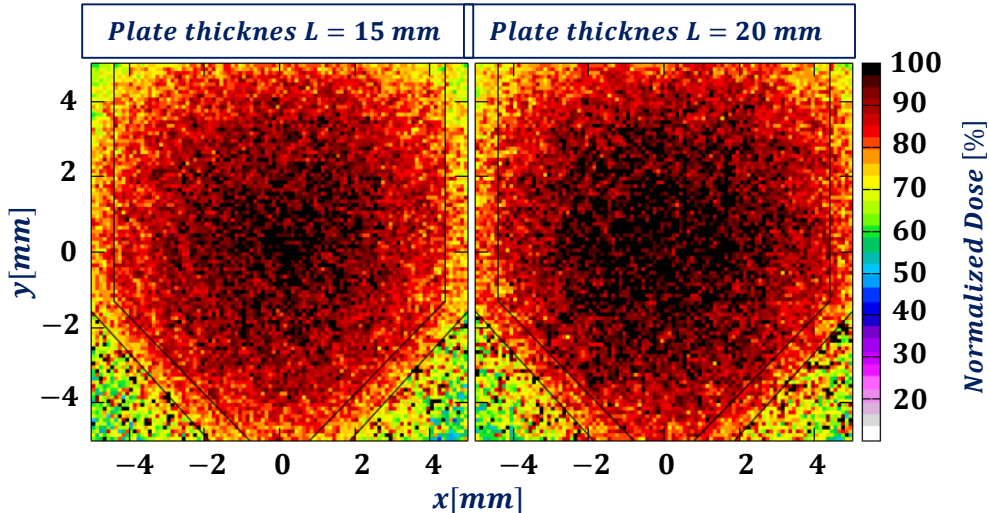Plate thicknes L = 20 mm

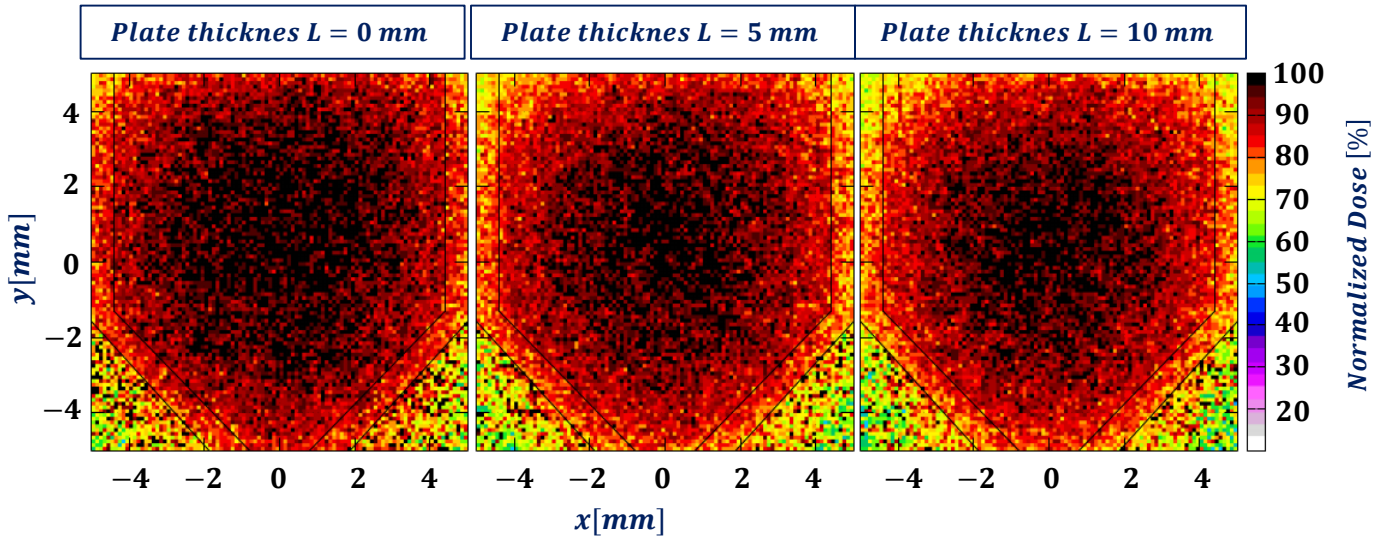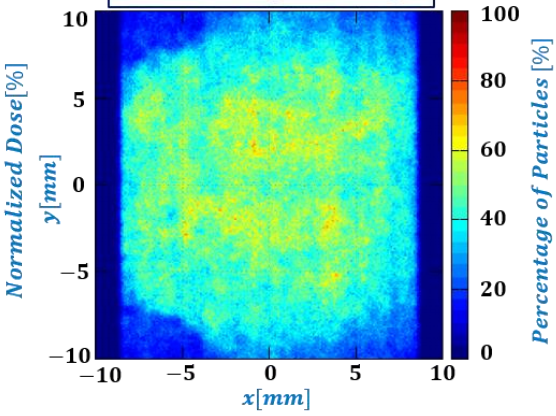Dose Radial Distribution Front Film
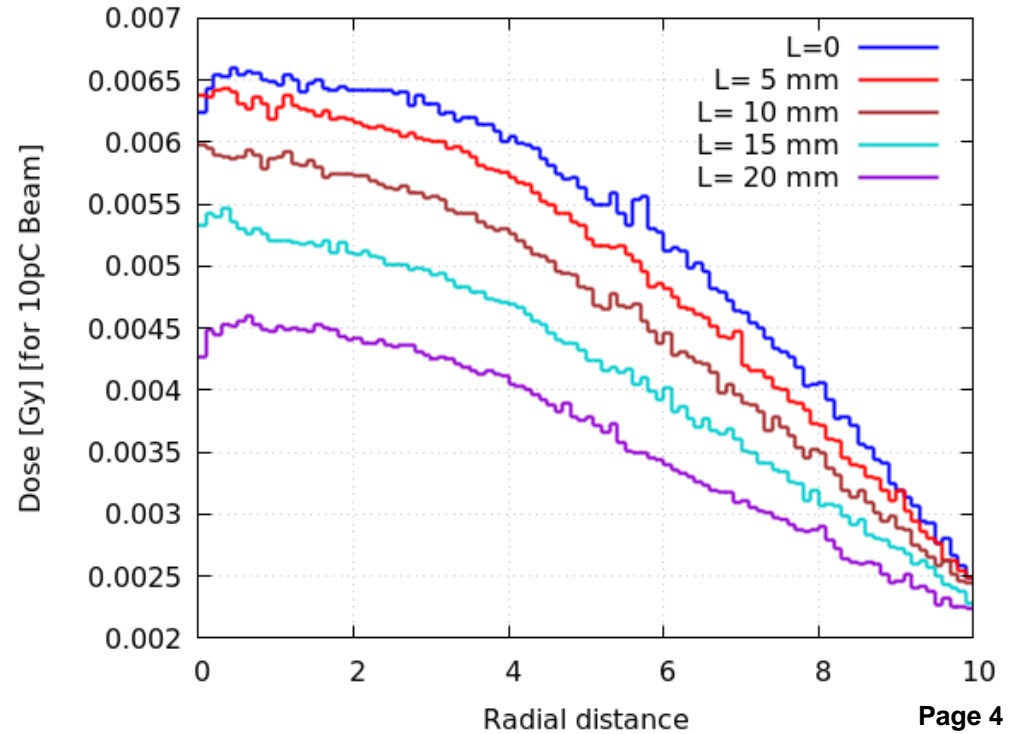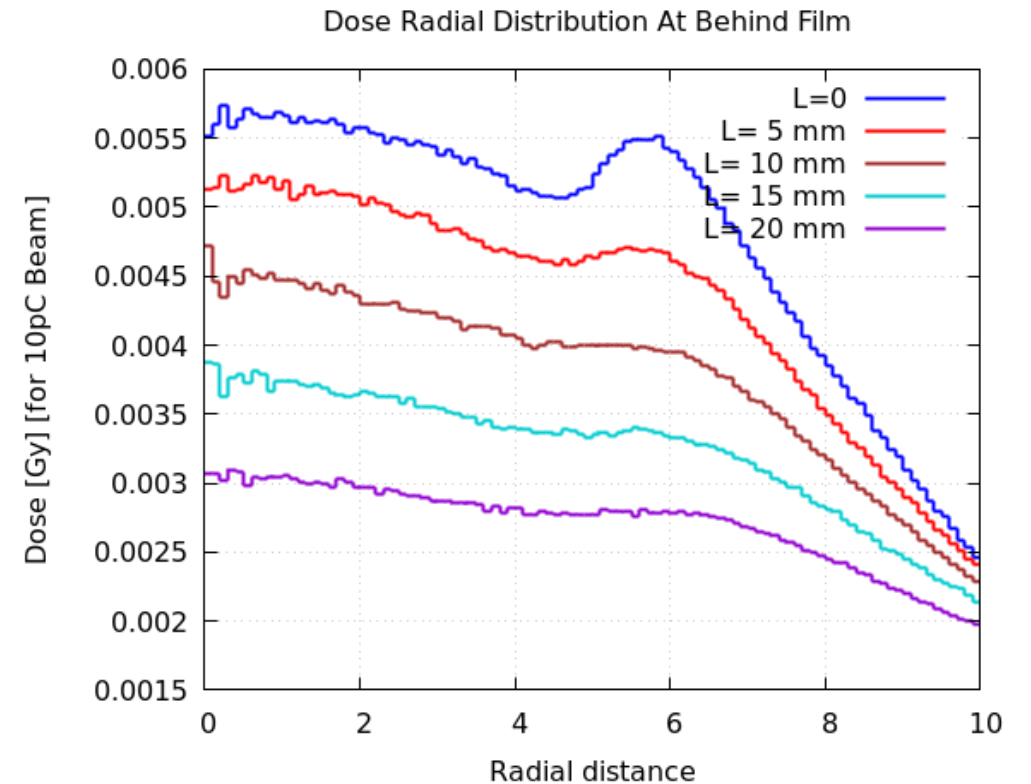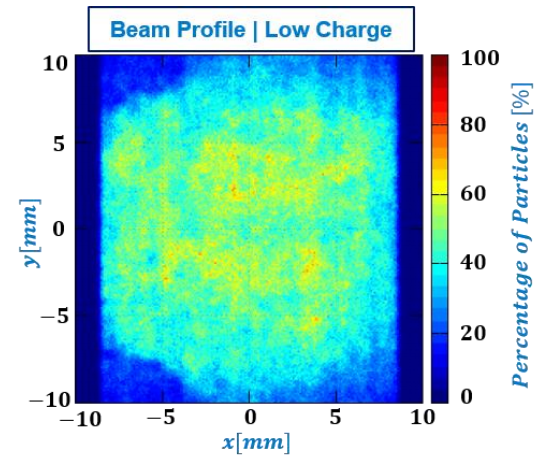
Dose profile on Center of Epp. Tube

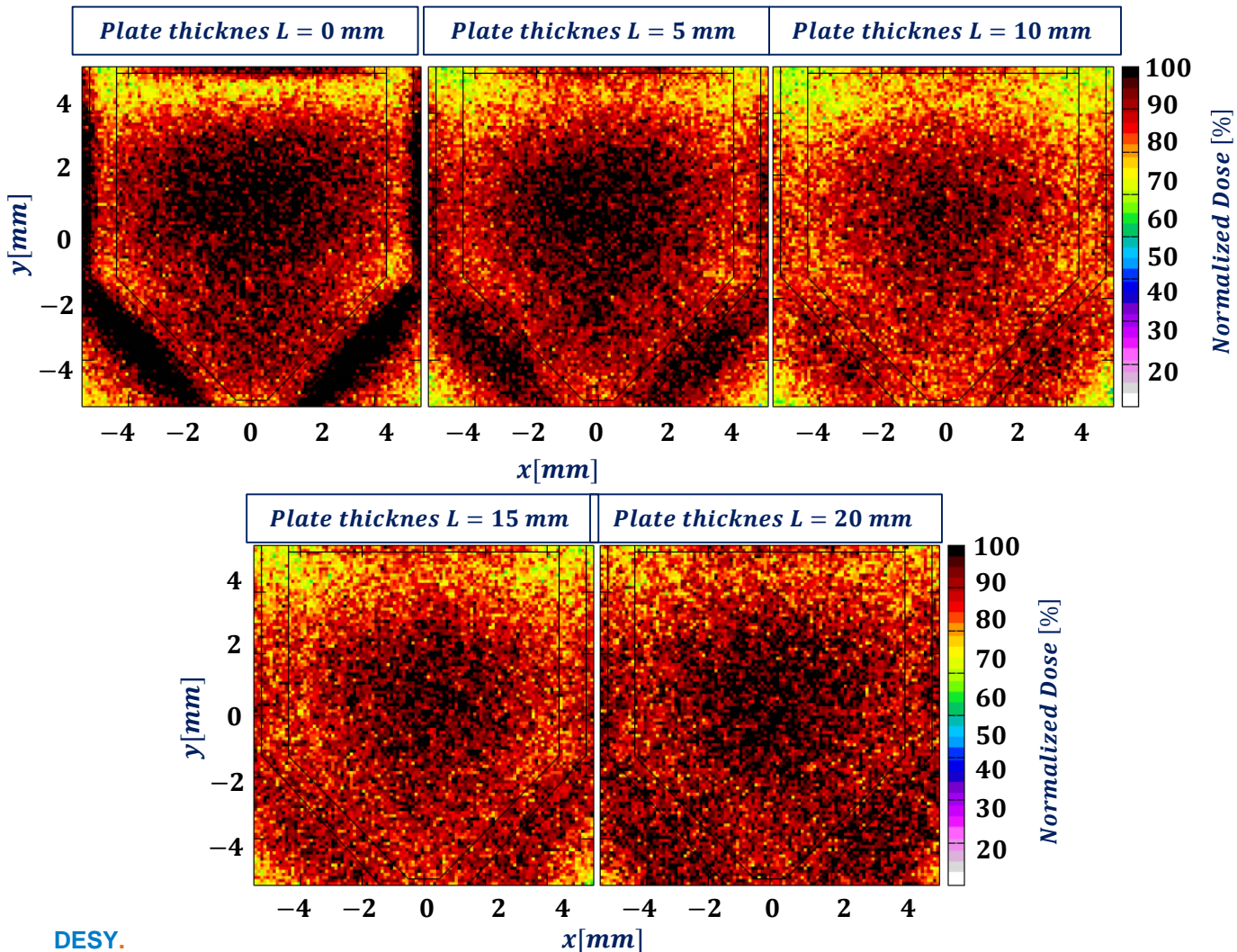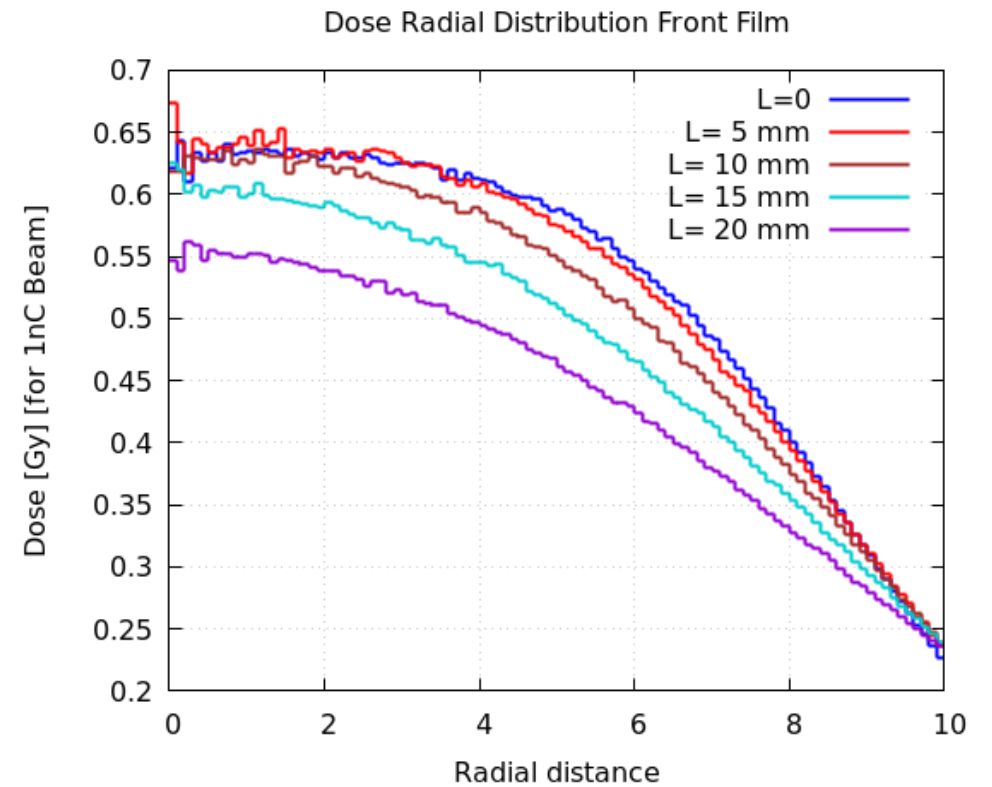Without Gaf. Film in Front of Epp tube.

Center of Epp. Tube

Beam Profile | Low Charge

Plate thicknes L = 0 mm

Plate thicknes L = 5 mm
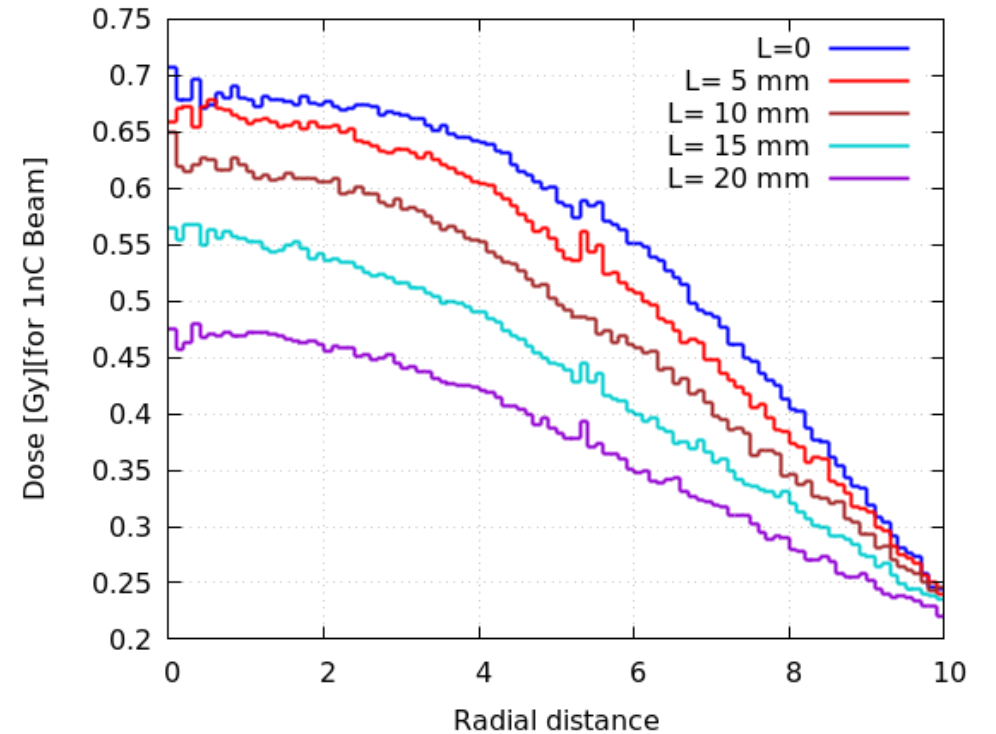
Plate thicknes L = 10 mm

Plate thicknes L = 15 mm

Plate thicknes L = 20 mm

Dose Radial Distribution Epp.Tube Center

L=0
L= 5 mm
L= 10 mm
L= 15 mm
L= 20 mm

Dose profile at behind film

Dose profile at front film

Beam Profile | High Charge

Plate thicknes $L = 0$ mm Plate thicknes $L = 5$ mm Plate thicknes $L = 10$ mm

Plate thicknes $L = 15$ mm Plate thicknes $L = 20$ mm

Dose Radial Distribution Front Film

L=0
L= 5 mm
L= 10 mm
L= 15 mm
L= 20 mm

Dose profile on Center of Epp. Tube

Plate thicknes L = 0 mm Plate thicknes L = 5 mm Plate thicknes L = 10 mm

Plate thicknes L = 15 mm Plate thicknes L = 20 mm

Without Gaf.Film in Front of Epp tube.

Center of Epp. Tube

Beam Profile | High Charge

Dose Radial Distribution Epp.Tube Center

L=0
L= 5 mm
L= 10 mm
L= 15 mm
L= 20 mm

Dose profile at behind film

Plate thickness L = 0 mm
Plate thickness L = 5 mm
Plate thickness L = 10 mm
Plate thickness L = 15 mm
Plate thickness L = 20 mm
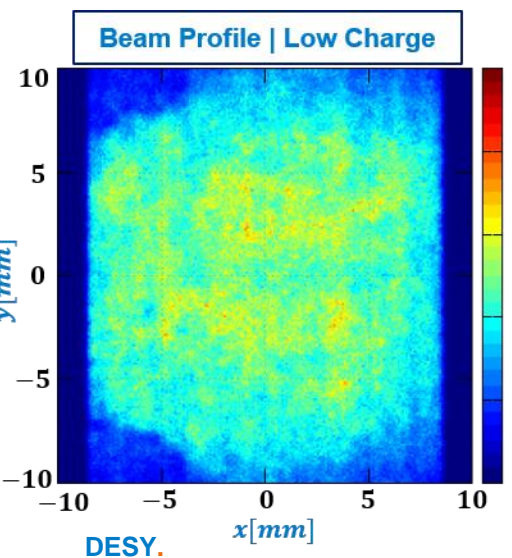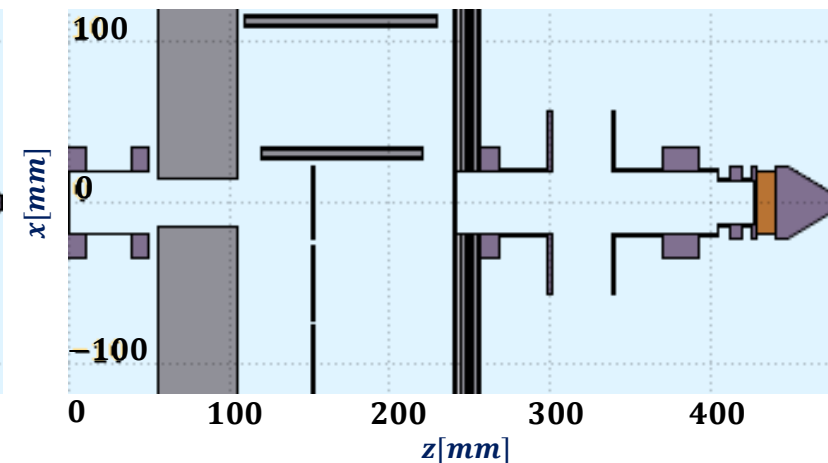
Beam Profile | High Charge

Dose Radial Distribution At Behind Film
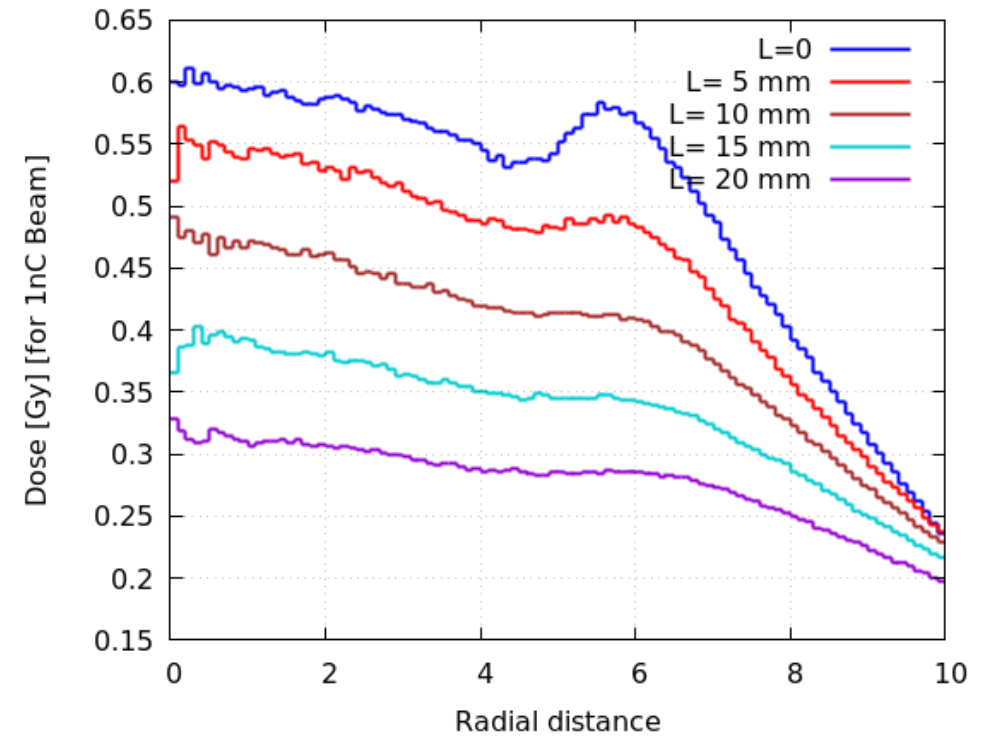
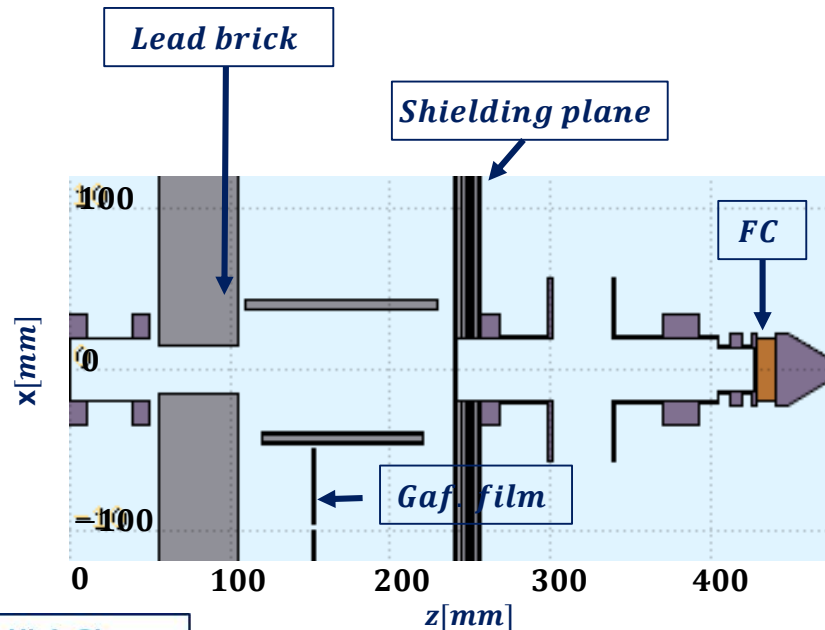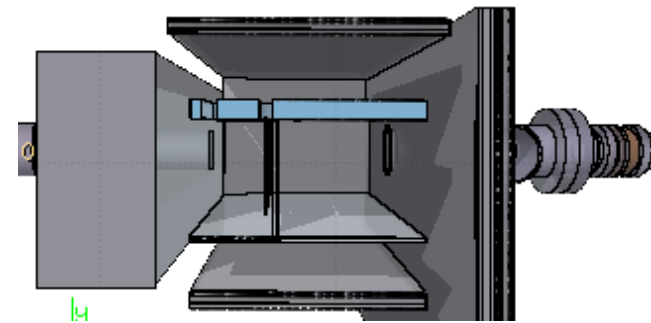# Backscattering

Simulation Setup

Schematic representation
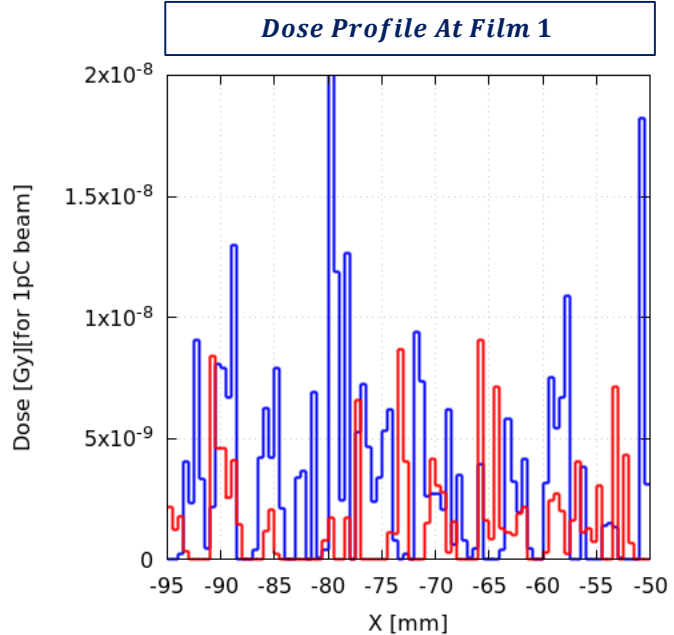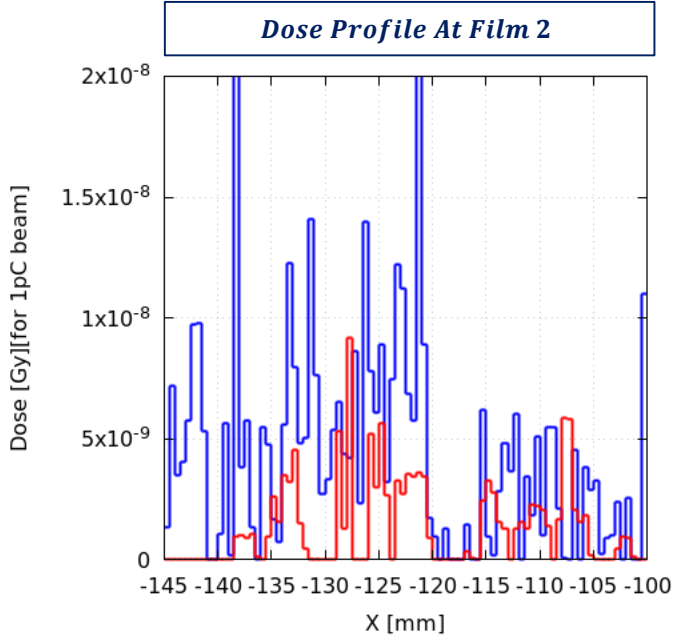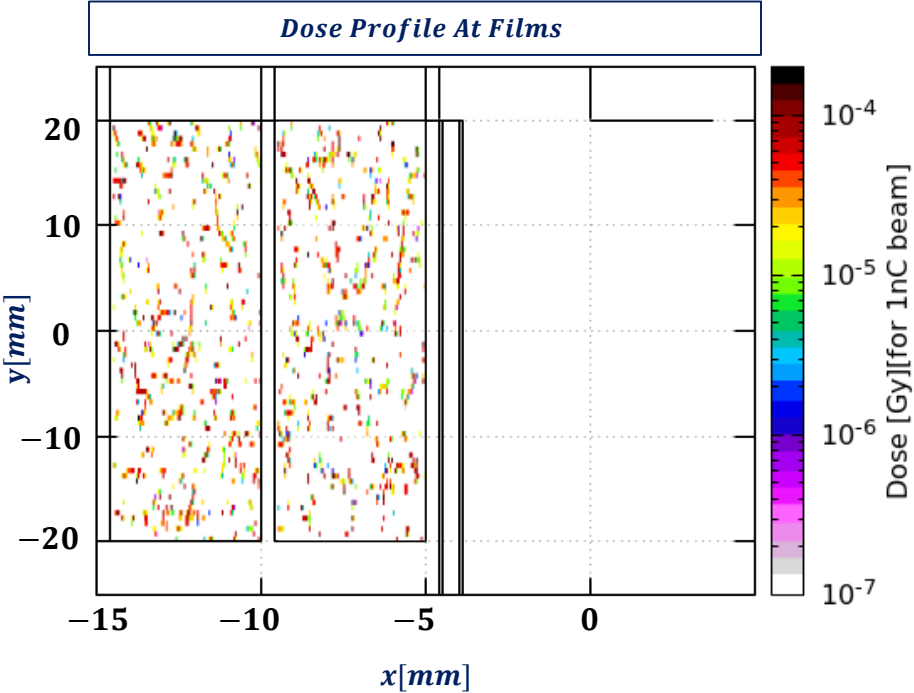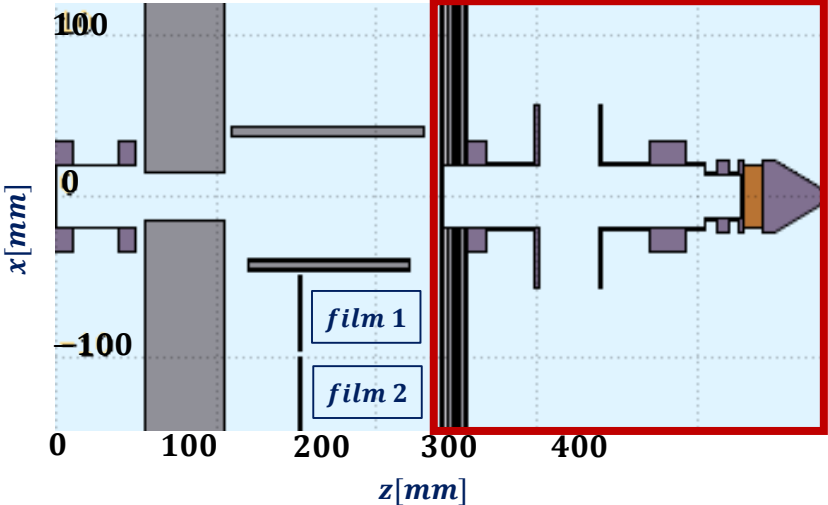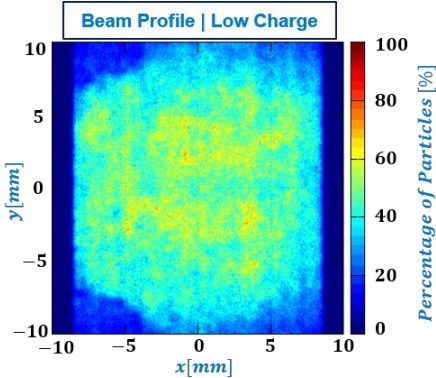
Geometry setting:

- Lead brick with

  - a thick of **50 mm**.

  - a **hole** diameter of **30 mm**.

- Distance from window to

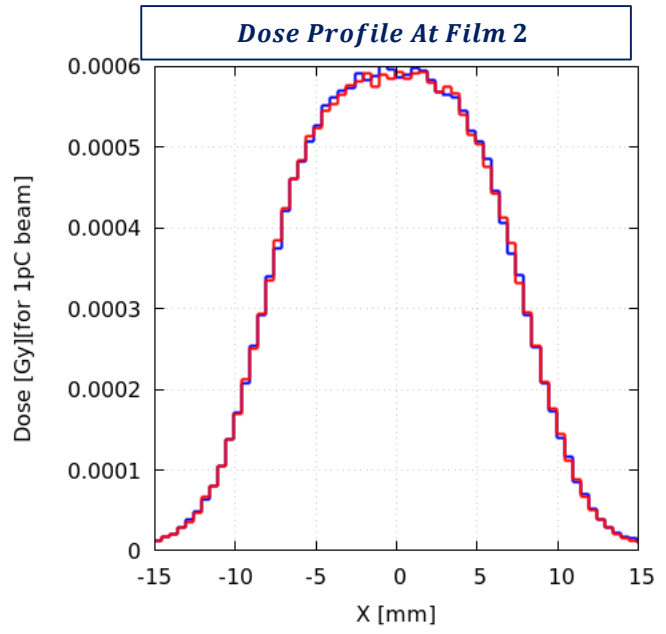 - **Gaf. film** is **150 mm**.

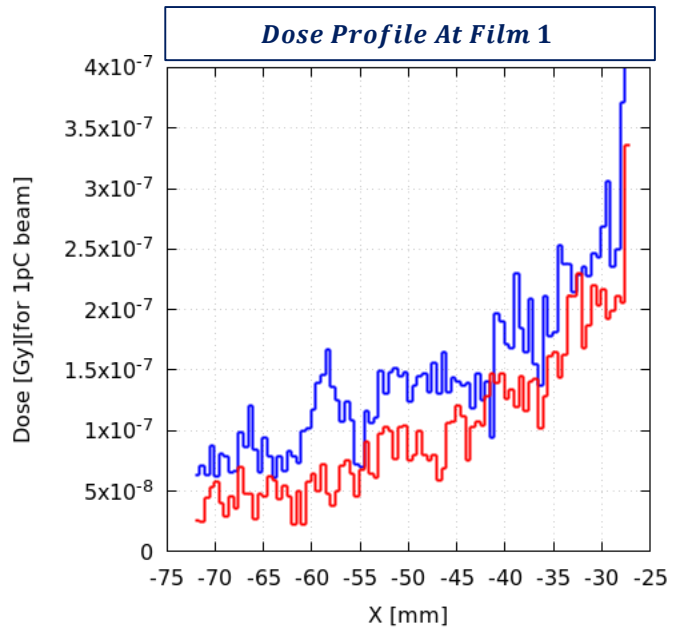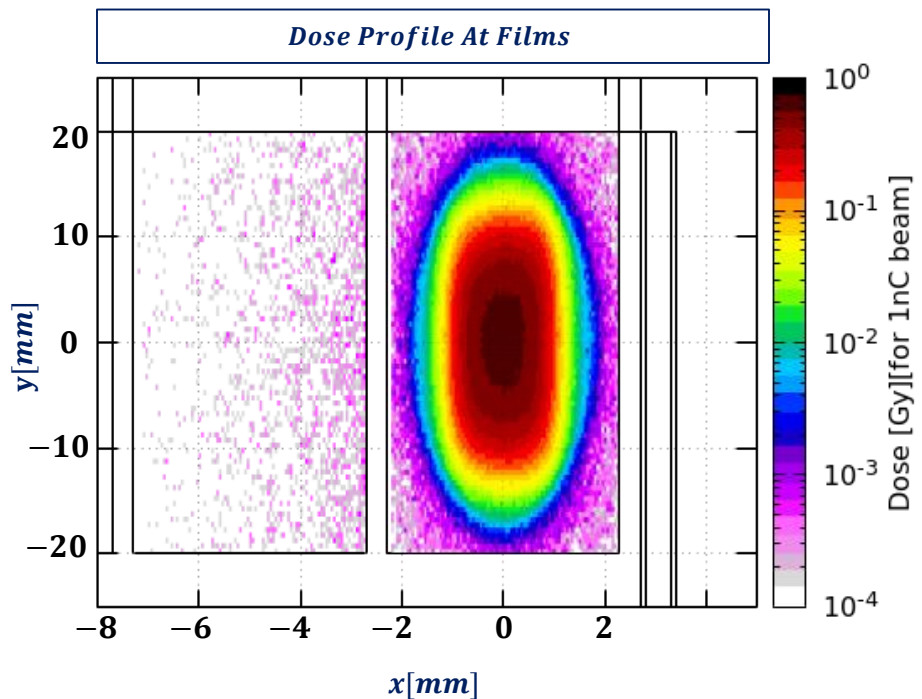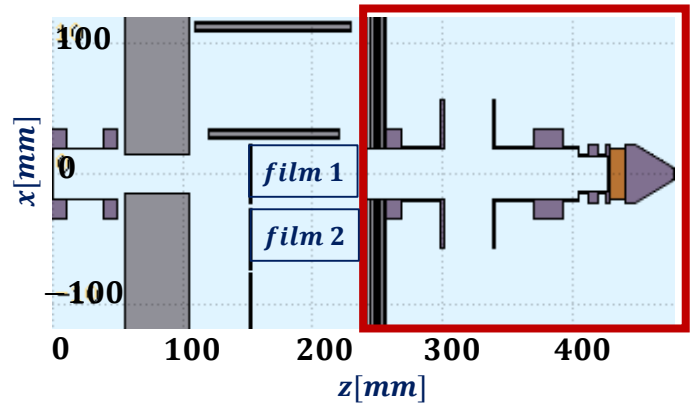 - **FC** is **430 mm**
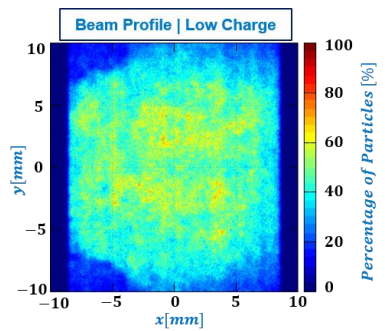

Beam Profile | Low Charge

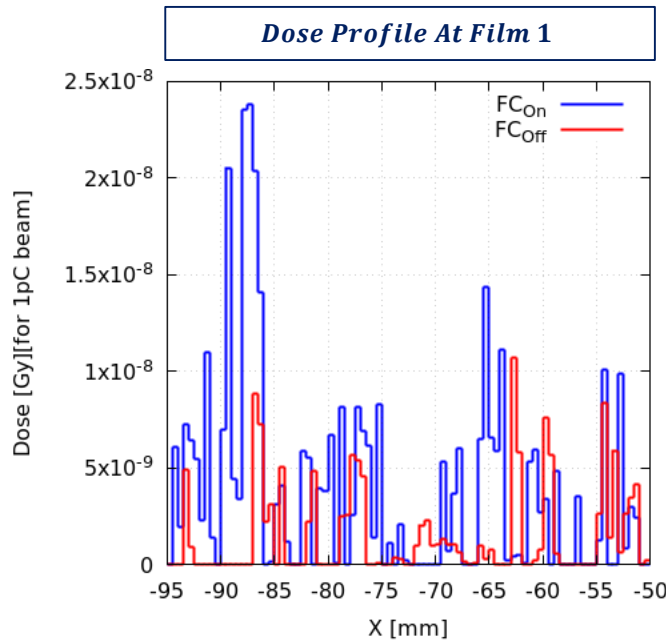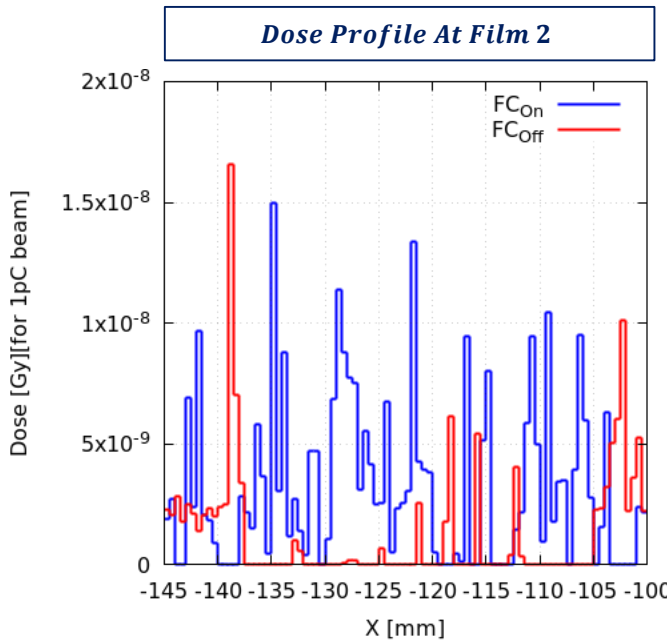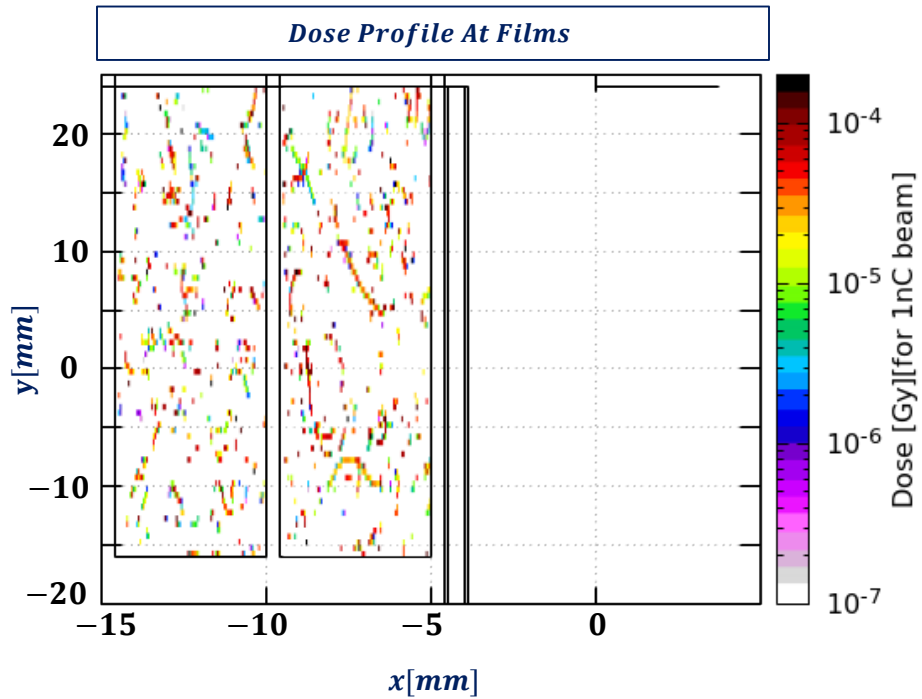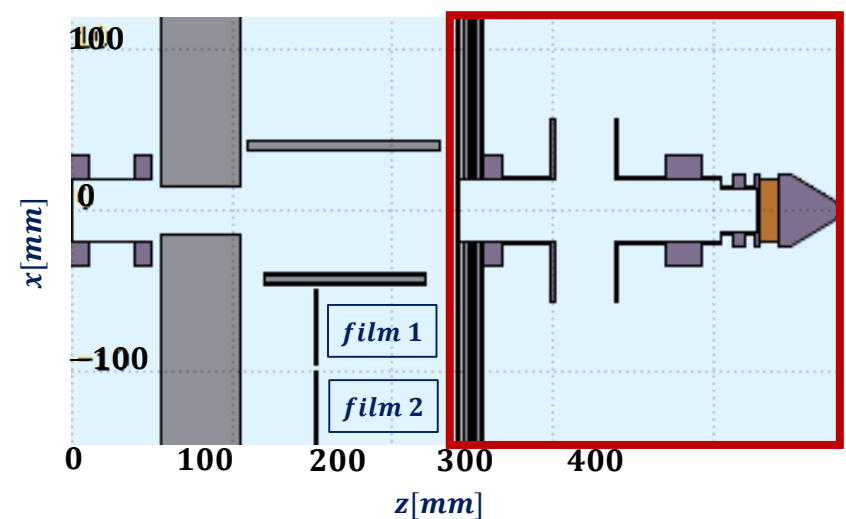Beam Profile | High Charge
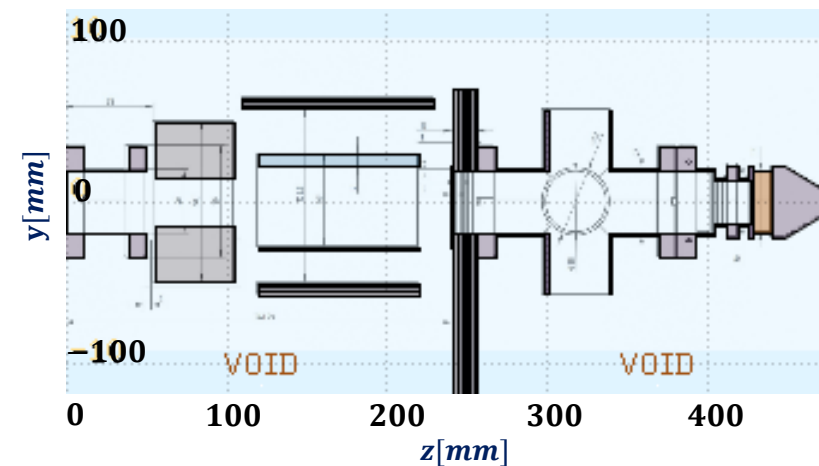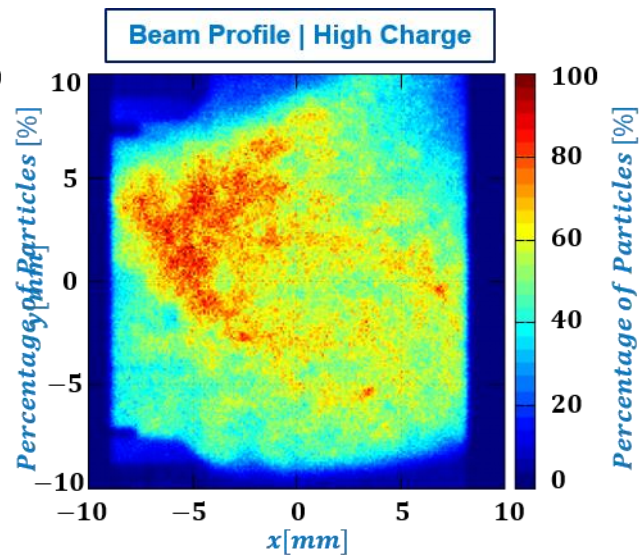
Dose profile on Gaf. Film
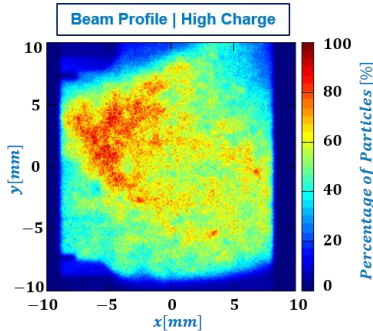
During the beam operation

Dose profile on Gaf. Film

During the irradiation

Dose profile on Gaf. Film

During the beam operation

Dose profile on Gaf. Film

During the irradiation

Beam Profile | High Charge

Dose Profile At Films

Dose Profile At Film 1

Dose Profile At Film 2