

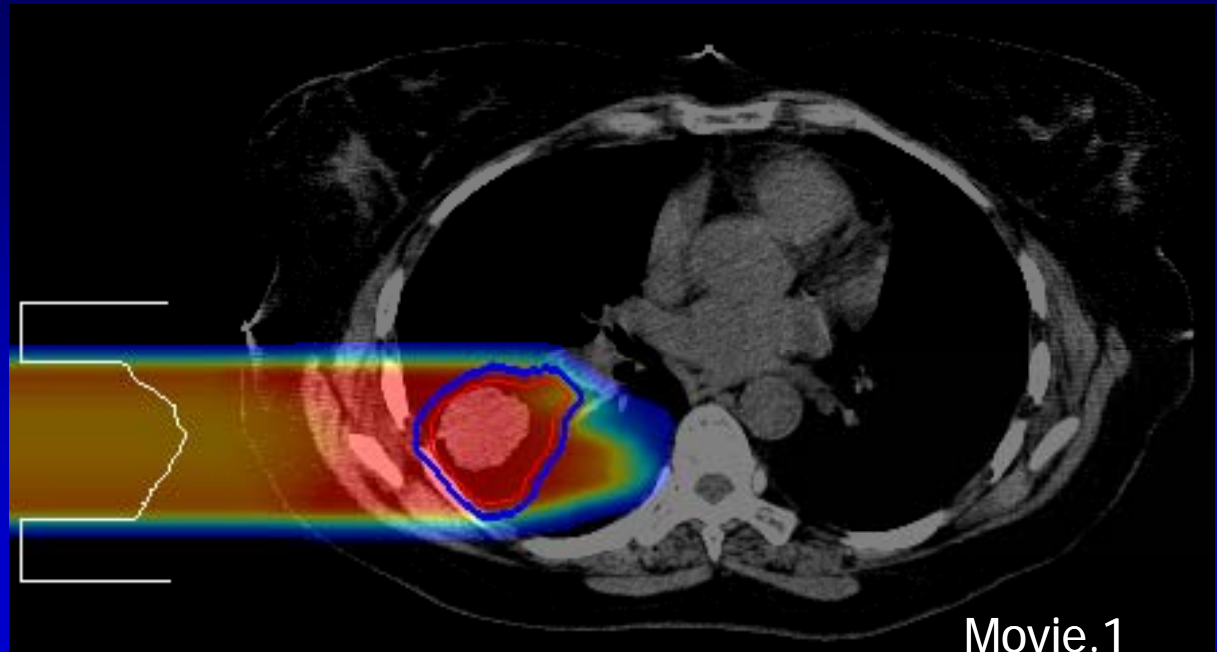
•4D Proton Plans

Non gating

Free breathing

0~10 % phase

GTV from MIP

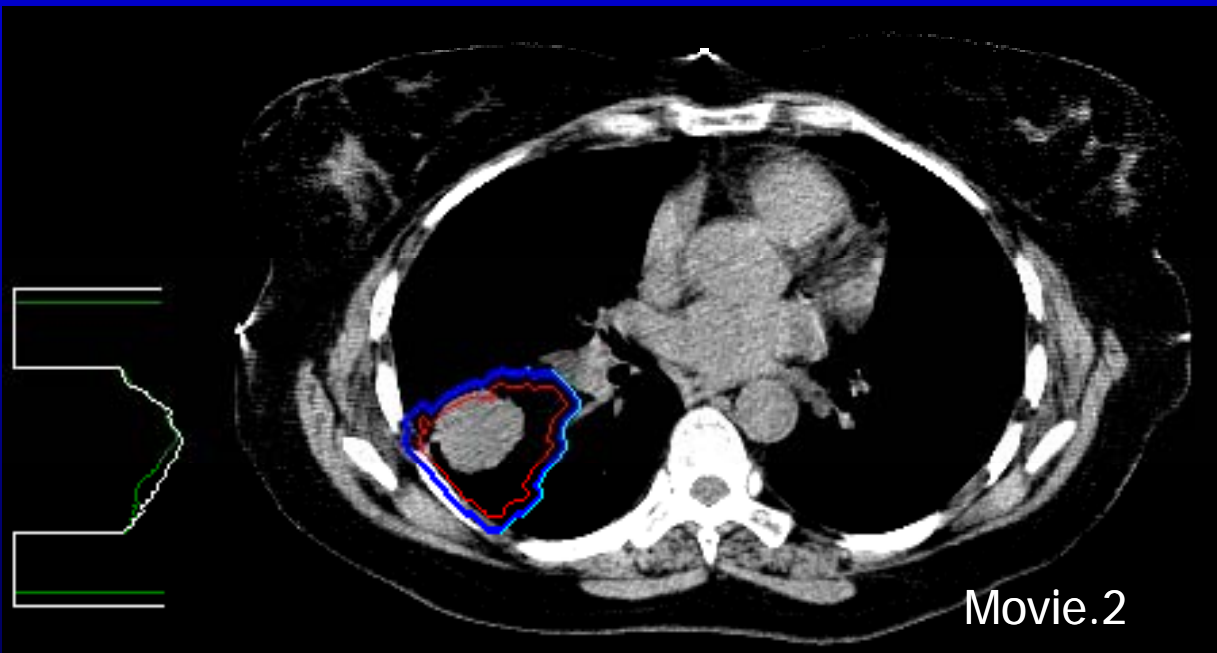


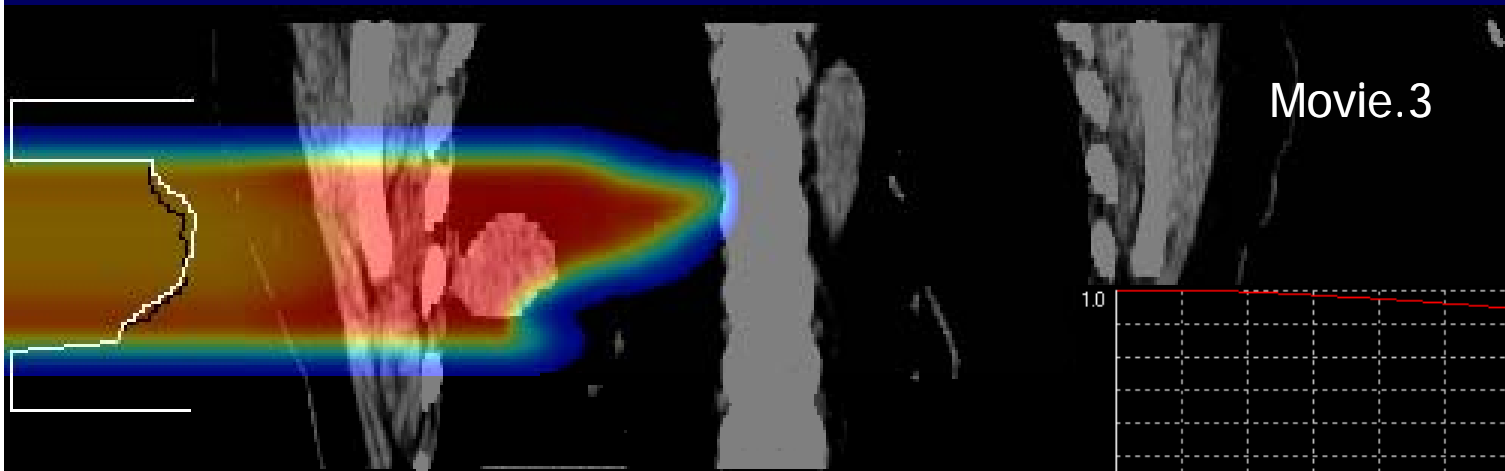
ROIs: Red GTV Blue CTV

Gating

40~60% expiration phase

GTV from MIP₄₀₋₆₀

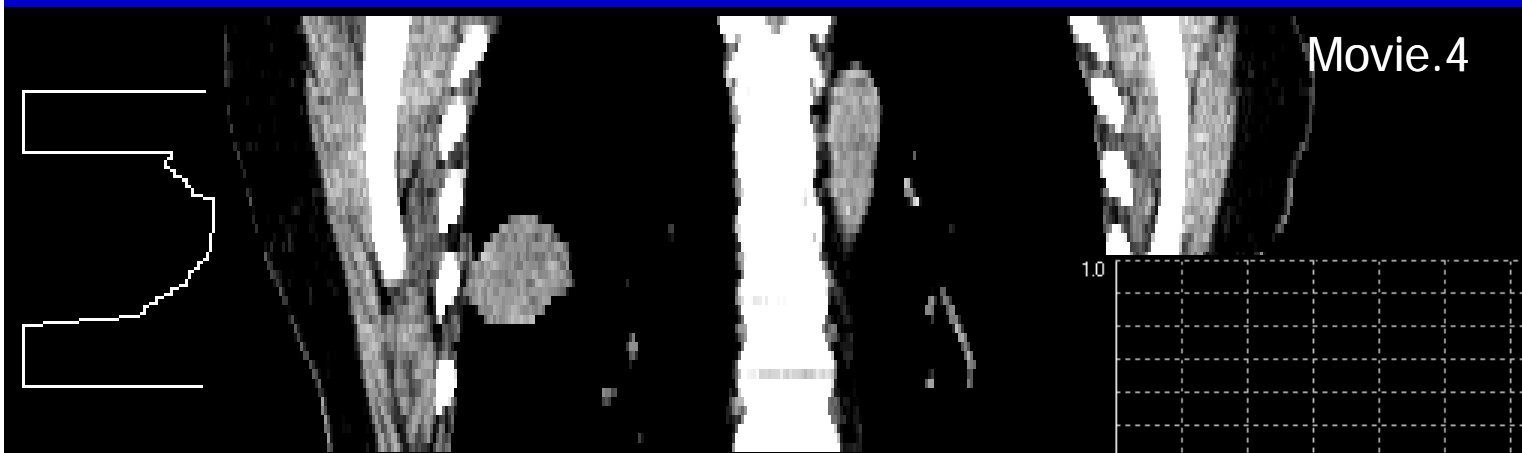
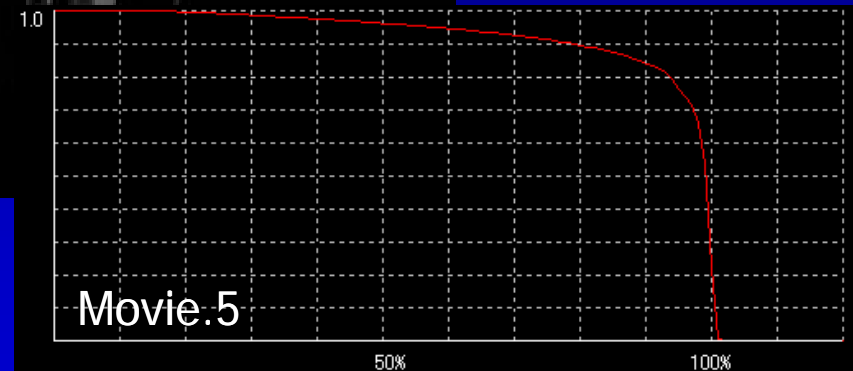




Movie.3

DVH on GTV

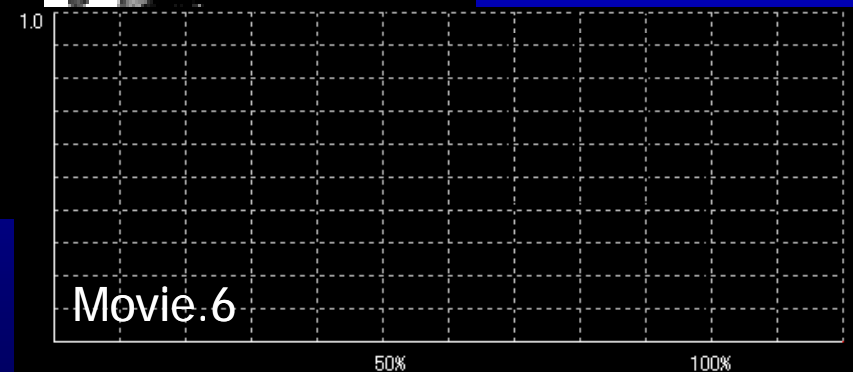
Non gate: Free breathing



Movie.4

DVH on GTV

Gating in 40~60% expiration phase



•Passive Scattering

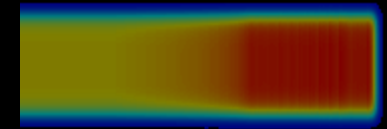
Movie.7

Rotating Modulating Wheel



Movie.8

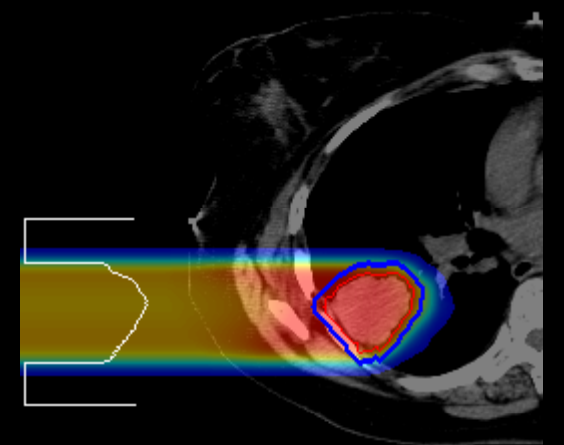
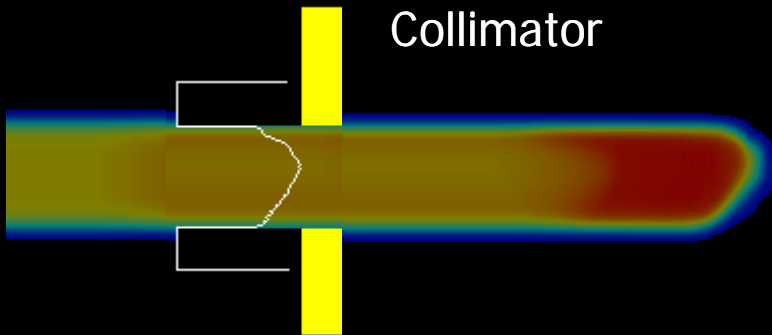
Second Scatter



Spread Out Bragg Peak (SOBP)

Compensator

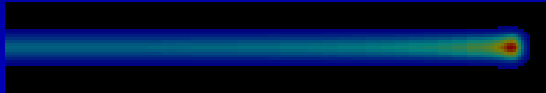
Collimator



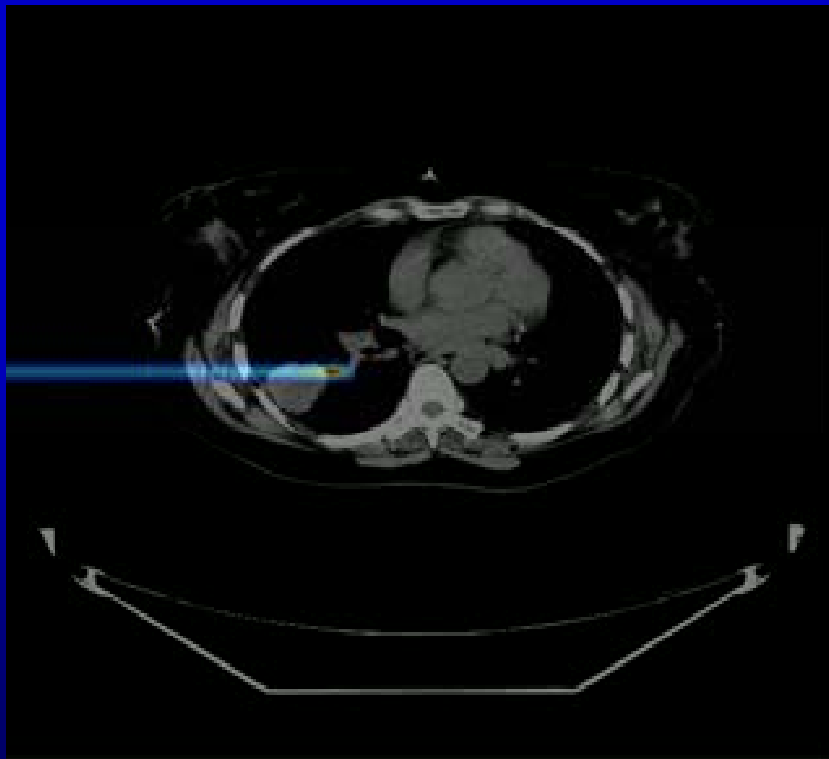
Target

•Spot scanning

The dose is deposited by scanning the dose "spot" delivered by a focused proton pencil beam

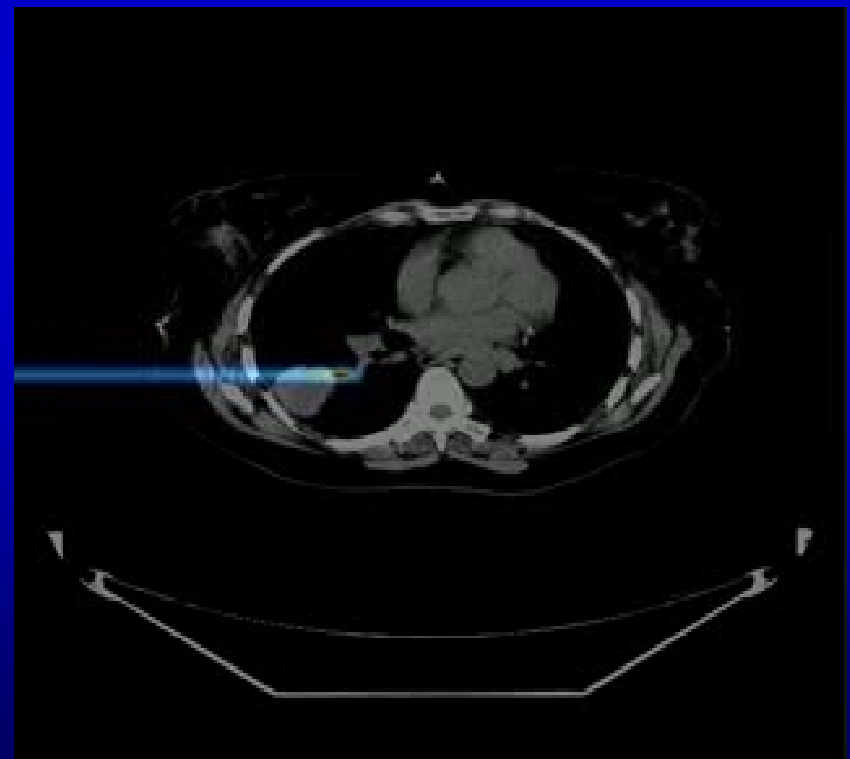


Cumulative dose



Movie.9

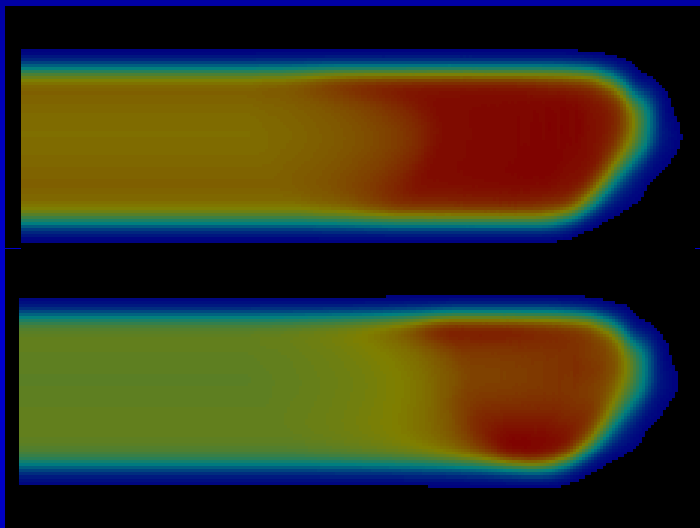
Spot position



Movie.10

- Comparison of Dose Distribution

Passive Scattering



Scanning Beam

