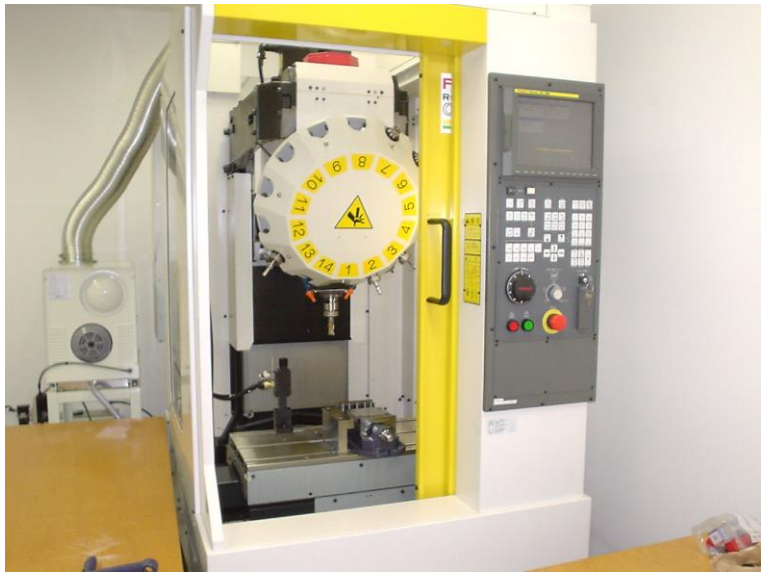
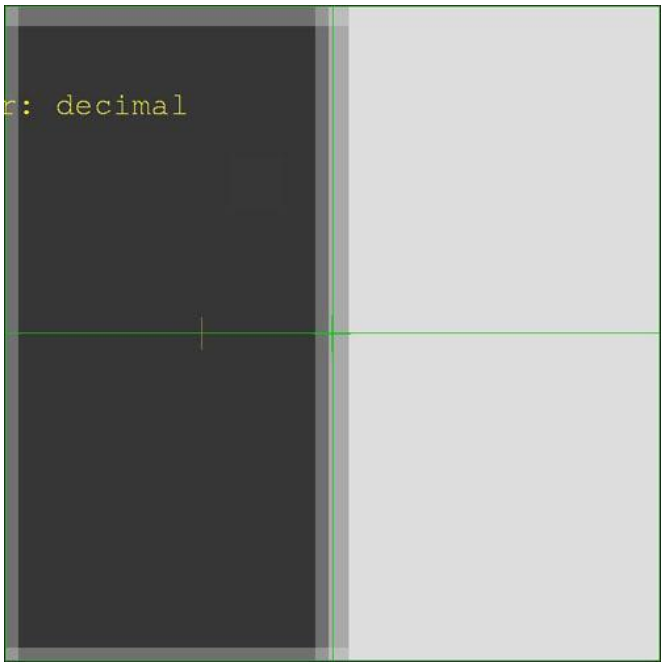
Fig. 1

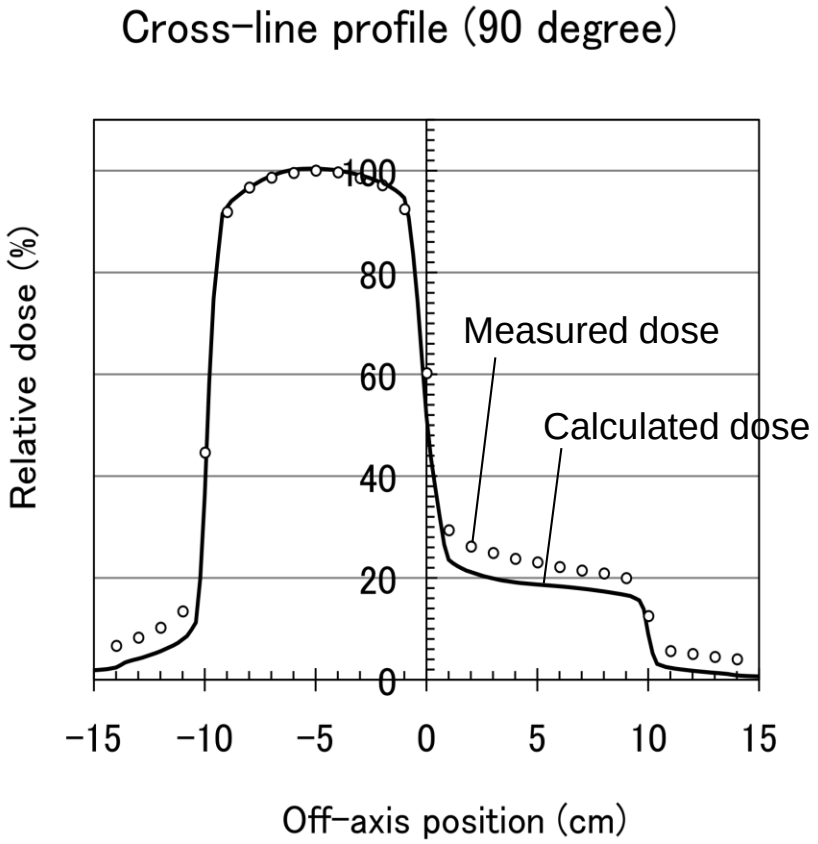


(a)

(b)

Fig. 2


decimal


Cross-line profile (90 degree)
Relative dose (%)
100
80
60
40
20
0
Measured dose
Calculated dose
−15
−10
−5
0
5
10
15
Off-axis position (cm)

(a)

(b)

Fig. 3

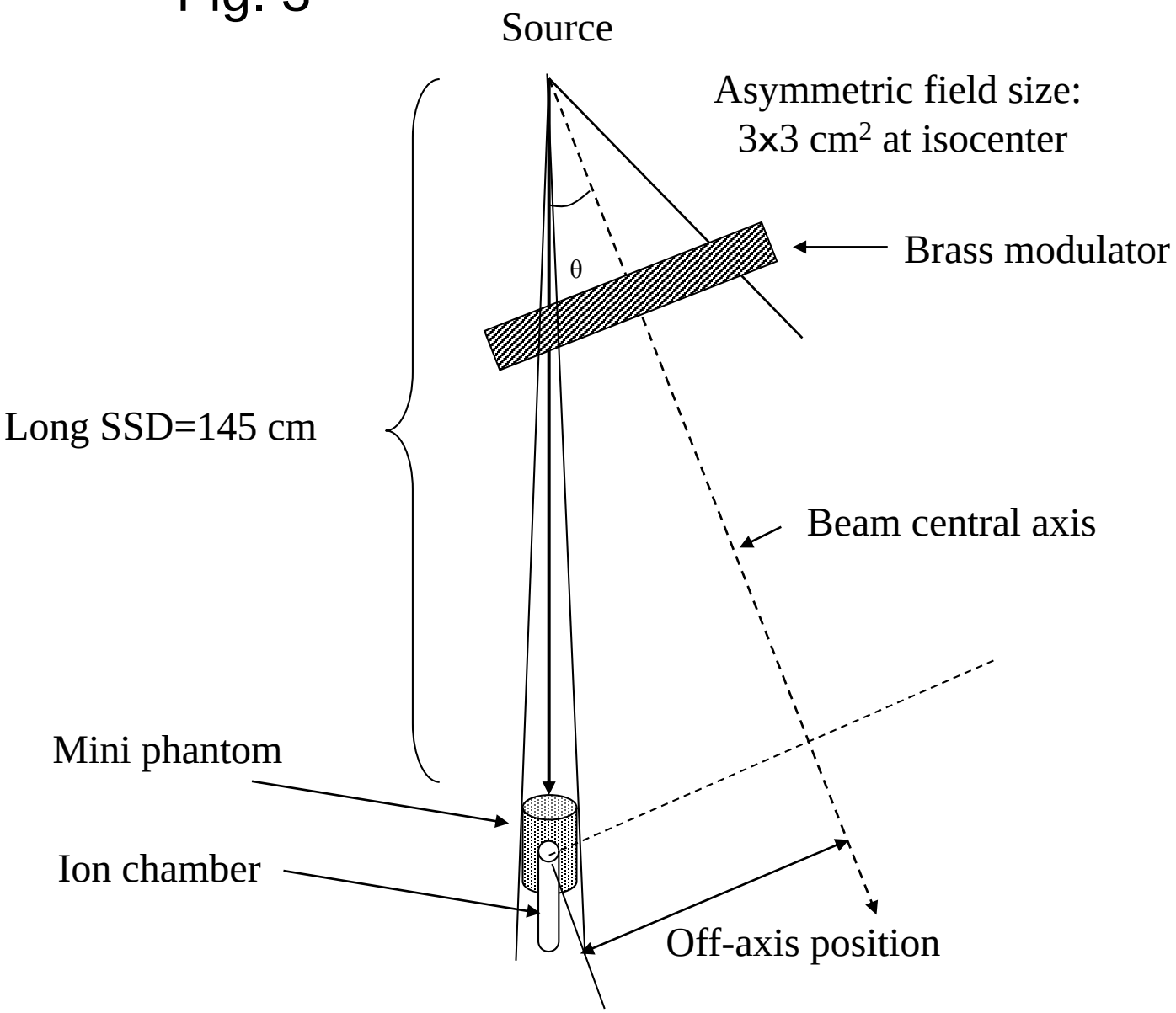

Source
Asymmetric field size:
3×3 cm2 at isocenter
Brass modulator
θ
Long SSD=145 cm
Beam central axis
Mini phantom
Ion chamber
Off-axis position

Table 1

Brass thickness(cm)	Off-axis position (cm)					
	0	2	4	6	8	10
0.5	0.4110	0.4129	0.4160	0.4210	0.4264	0.4312
1	0.4030	0.4051	0.4075	0.4120	0.4165	0.4204
2.5	0.3920	0.3936	0.3950	0.3979	0.4019	0.4065
4	0.3850	0.3859	0.3879	0.3899	0.3931	0.3969
6	0.3740	0.3744	0.3760	0.3778	0.3804	0.3836

Table 2

i	a_i	b_i	c_i	d_i
1	6.520E-07	-1.046E-05	4.994E-05	-6.637E-05
2	-9.191E-06	1.474E-04	-7.175E-04	1.230E-03
3	6.257E-07	-1.168E-04	6.933E-04	2.223E-04
4	-9.285E-04	1.050E-02	-4.929E-02	1.097E+00

$$m_{ratio}(r,t) = (a_1 t^3 + b_1 t^2 + c_1 t + d_1) \times r^3 + (a_2 t^3 + b_2 t^2 + c_2 t + d_2) \times r^2$$
$$+ (a_3 t^3 + b_3 t^2 + c_3 t + d_3) \times r + (a_4 t^3 + b_4 t^2 + c_4 t + d_4)$$

Fig. 4

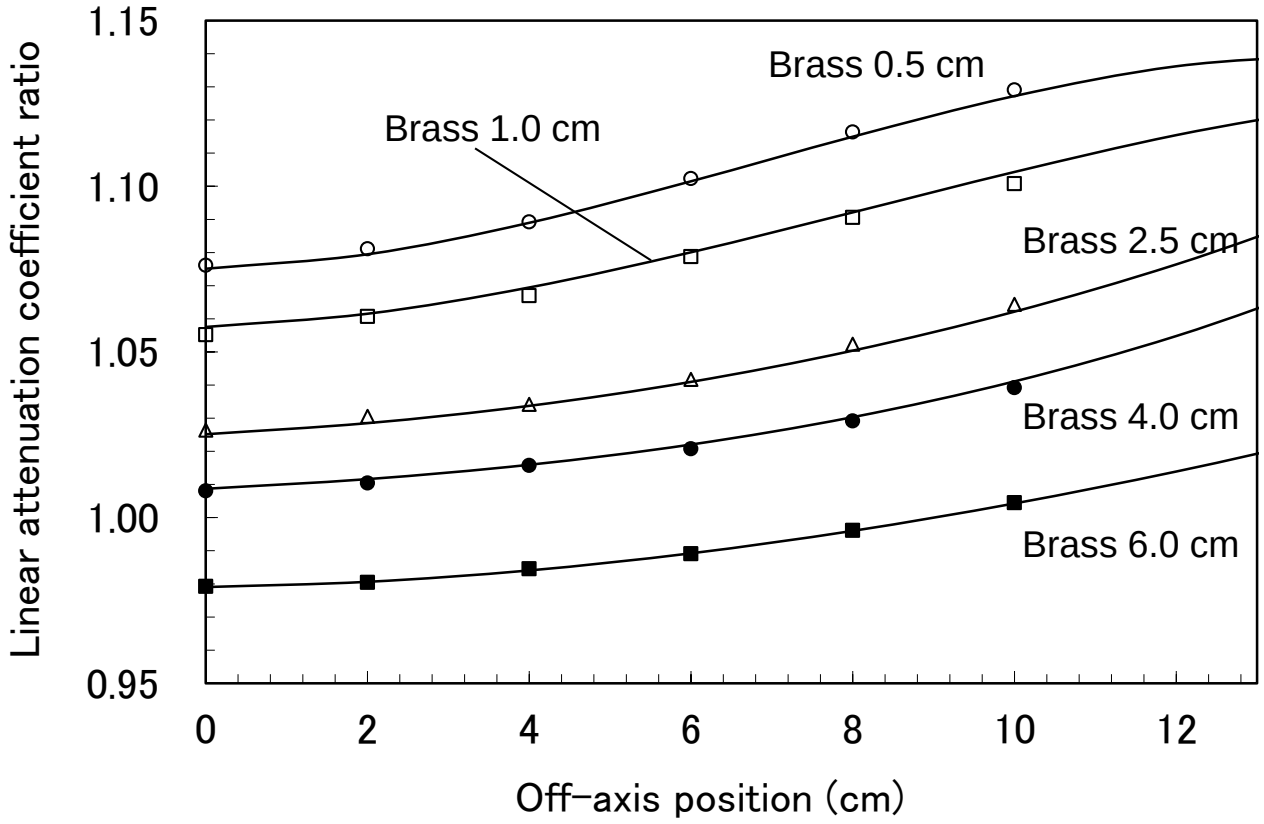

Linear attenuation coefficient ratio
1.15
1.10
1.05
1.00
0.95
0
2
4
6
8
10
12
Off-axis position (cm)
Brass 0.5 cm
Brass 1.0 cm
Brass 2.5 cm
Brass 4.0 cm
Brass 6.0 cm

Fig. 5

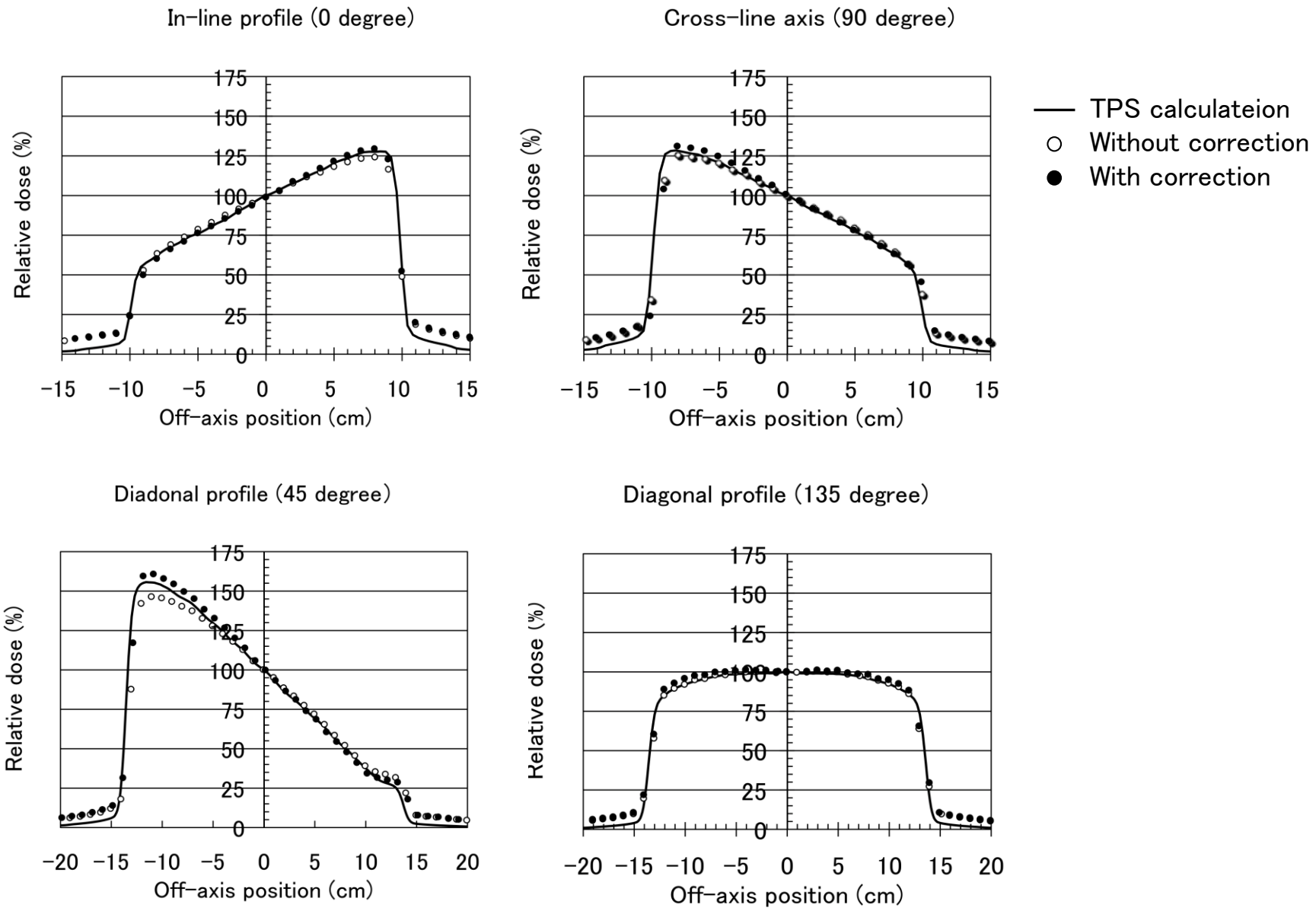

In-line profile (0 degree)
Cross-line axis (90 degree)
Diadonal profile (45 degree)
Diagonal profile (135 degree)
Relative dose (%)
Off-axis position (cm)
TPS calculateion
Without correction
With correction

Fig. 6

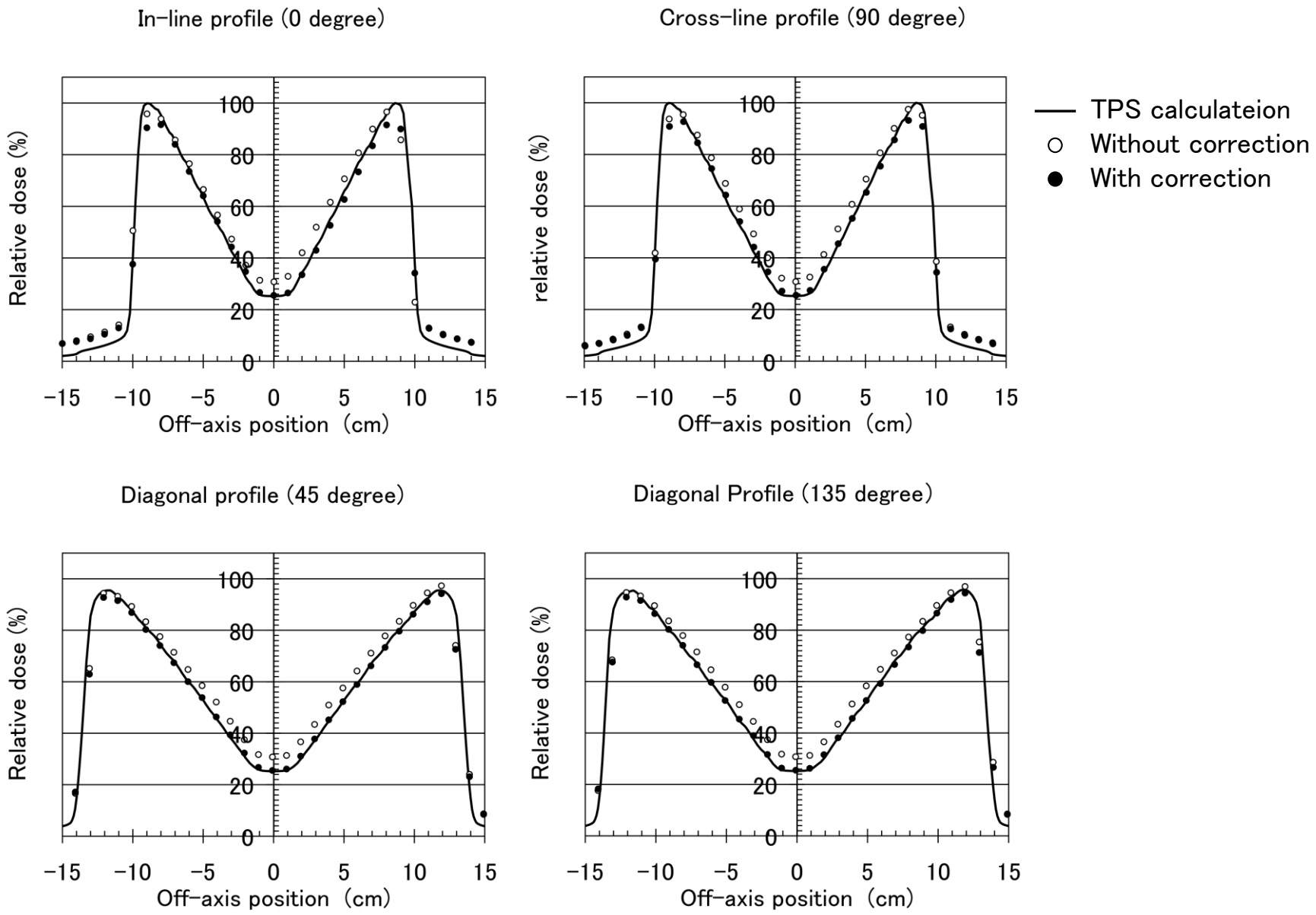

In-line profile (0 degree)
Cross-line profile (90 degree)
Diagonal profile (45 degree)
Diagonal Profile (135 degree)
Relative dose (%)
relative dose (%)
Off-axis position (cm)
TPS calculateion
Without correction
With correction

Fig. 7

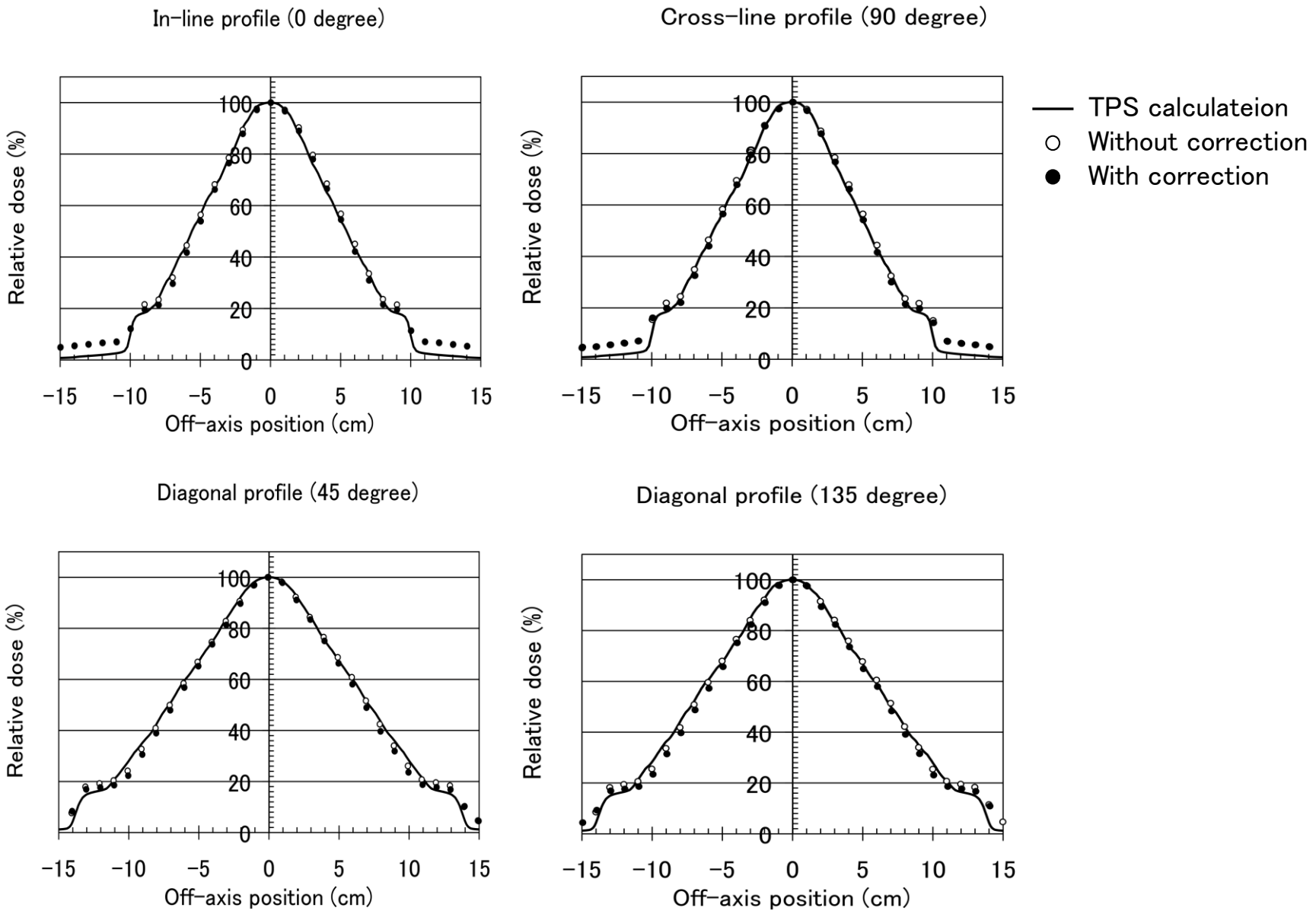

In-line profile (0 degree)
Cross-line profile (90 degree)
Diagonal profile (45 degree)
Diagonal profile (135 degree)
Relative dose (%)
Off-axis position (cm)
0
20
40
60
80
100
−15
−10
−5
0
5
10
15
TPS calculateion
Without correction
With correction

Fig. 8

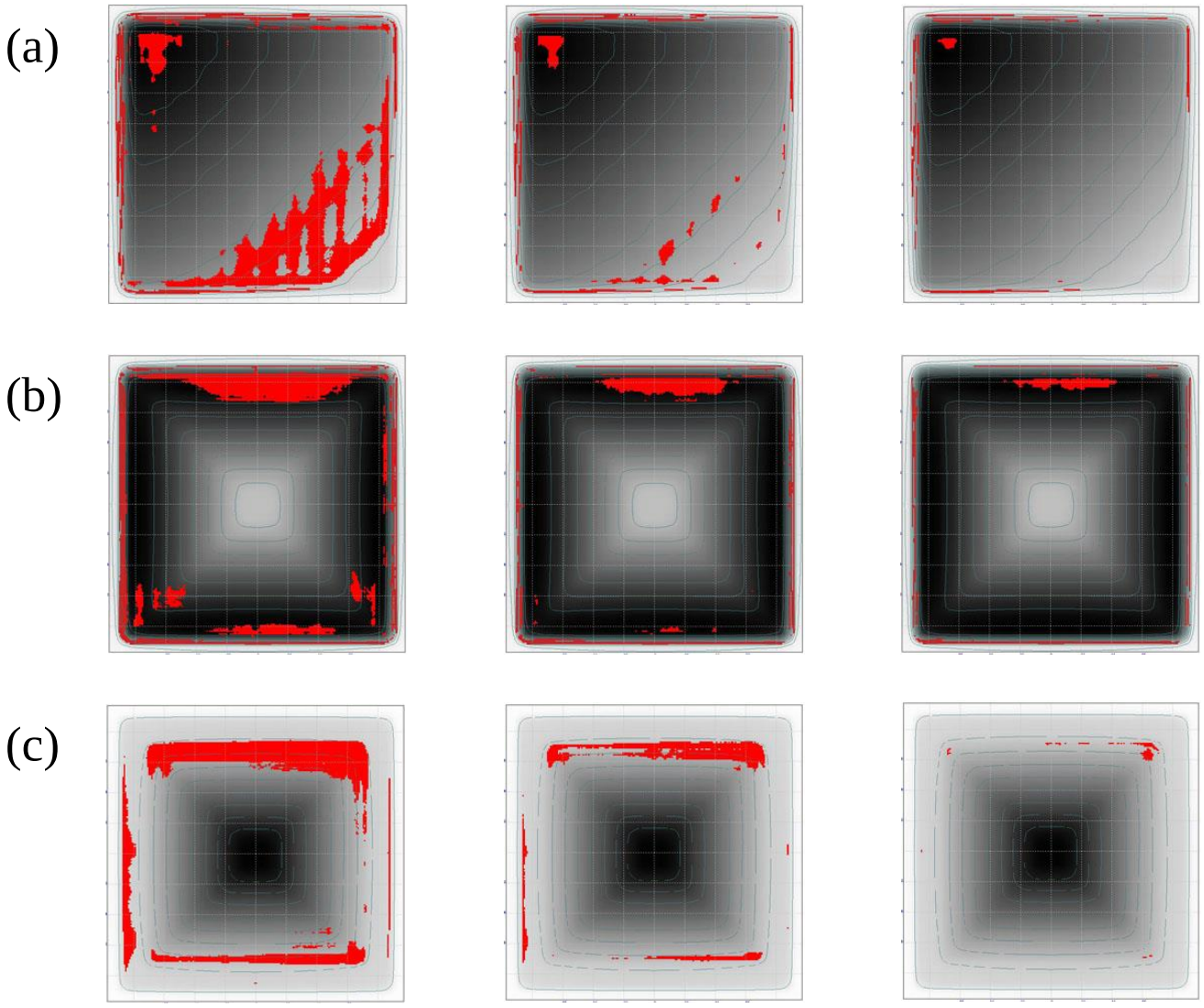
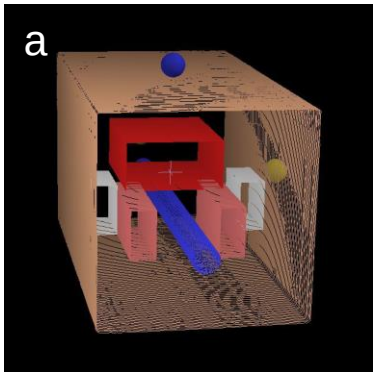
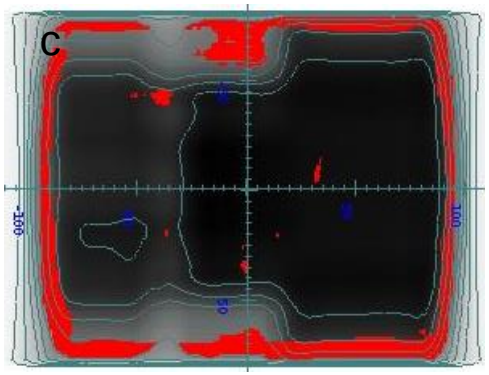


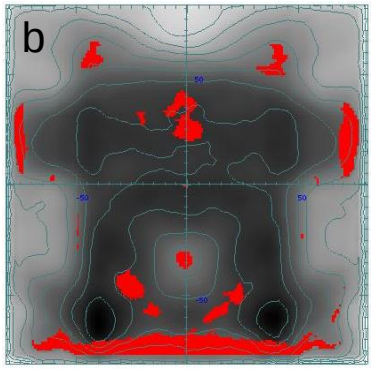
Fig. 9



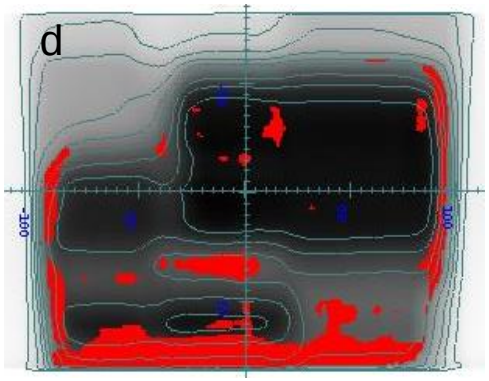
Schematic image of the pharynx model phantom



Coronal plane



Transverse plane



Sagittal plane