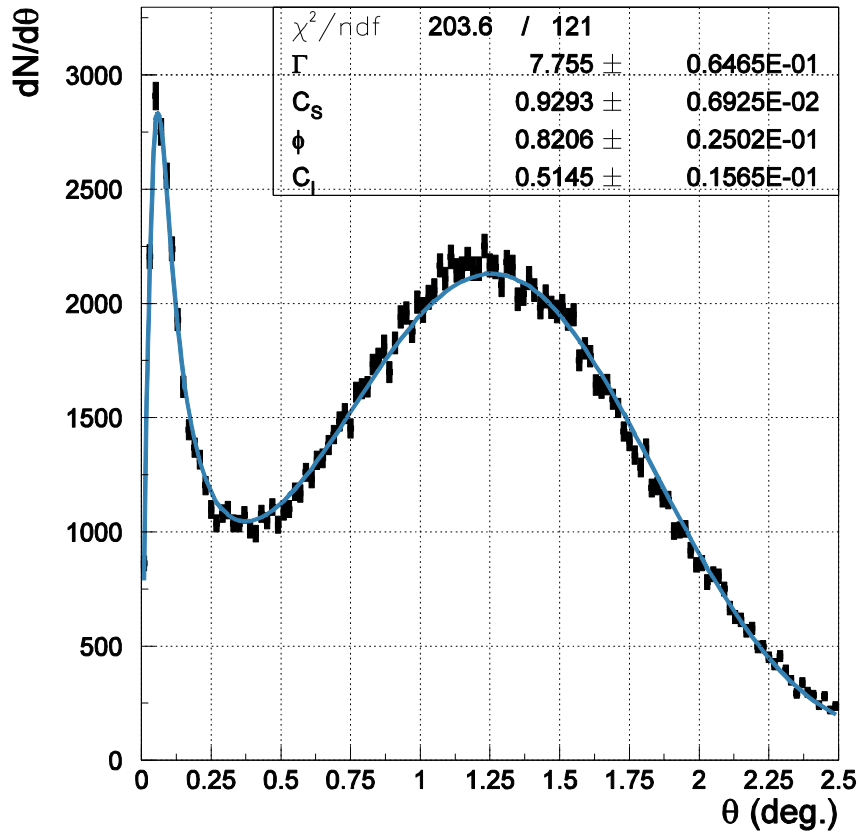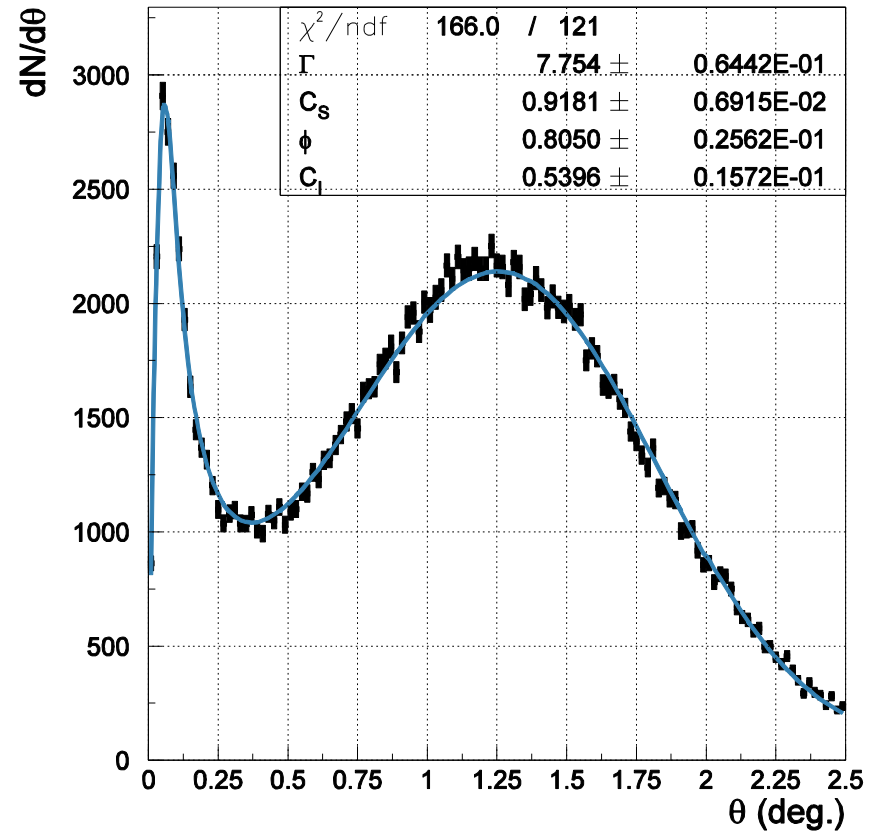- Study $m_{\gamma\gamma}$ background fitting correction

- Fit the yield of 50 MC runs

Silicon

With old background fit correction
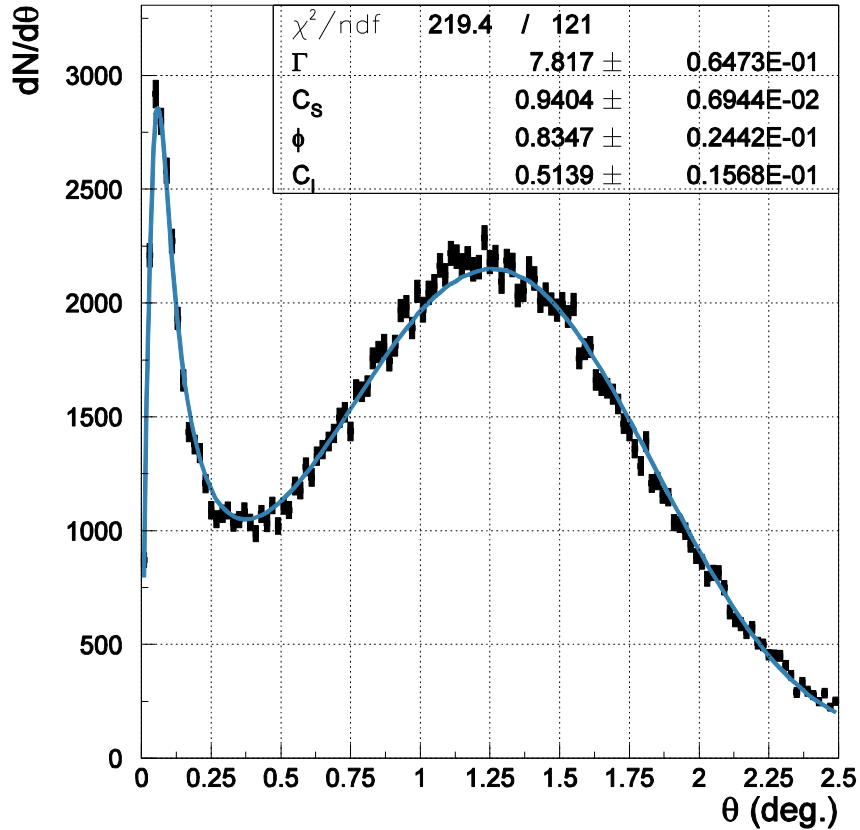(yield from the $m_{\gamma\gamma}$ fit parameter)

With new background fit correction
(yield from the $m_{\gamma\gamma}$ fit parameter)

χ^2/ndf	203.6 / 121	
Γ	7.755 $\pm$	0.6465E-01
C_s	0.9293 $\pm$	0.6925E-02
ϕ	0.8206 $\pm$	0.2502E-01
C_l	0.5145 $\pm$	0.1565E-01

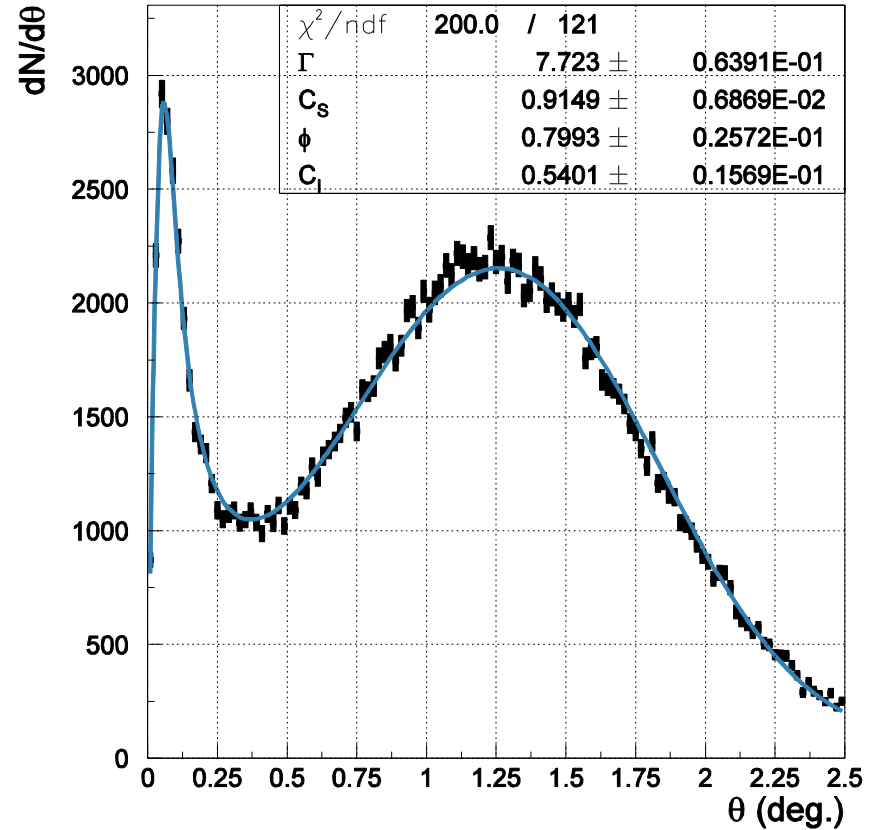| χ^2/ndf	166.0 / 121	
Γ	7.754 $\pm$	0.6442E-01
C_s	0.9181 $\pm$	0.6915E-02
ϕ	0.8050 $\pm$	0.2562E-01
C_l	0.5396 $\pm$	0.1572E-01

dN/dθ

θ (deg.)

2

Silicon

With old background fit correction
(yield from the sum of bins of $m_{\gamma\gamma}$)

With new background fit correction
(yield from the sum of bins of $m_{\gamma\gamma}$)

χ^2/ndf	**219.4**	/	**121**
Γ		7.817 $\pm$	0.6473E-01
C_s		0.9404 $\pm$	0.6944E-02
ϕ		0.8347 $\pm$	0.2442E-01
C_I		0.5139 $\pm$	0.1568E-01

χ^2/ndf	**200.0**	/	**121**
Γ		7.723 $\pm$	0.6391E-01
C_s		0.9149 $\pm$	0.6869E-02
ϕ		0.7993 $\pm$	0.2572E-01
C_I		0.5401 $\pm$	0.1569E-01

Carbon

With old background fit correction
(yield from the $m_{\gamma\gamma}$ fit parameter)

With new background fit correction
(yield from the $m_{\gamma\gamma}$ fit parameter)

Carbon

With old background fit correction
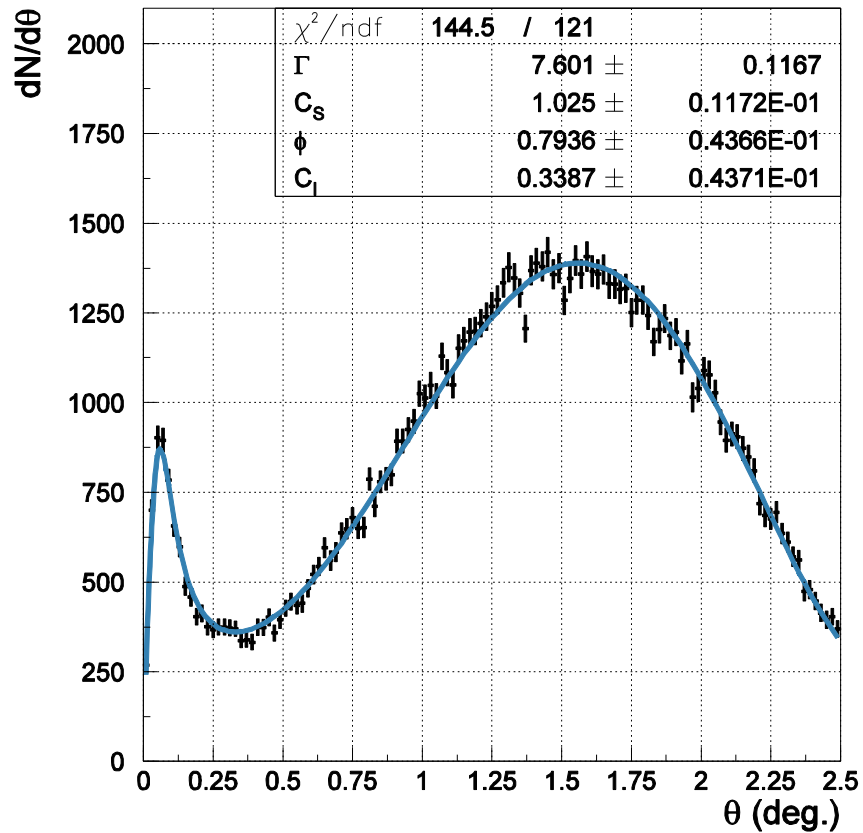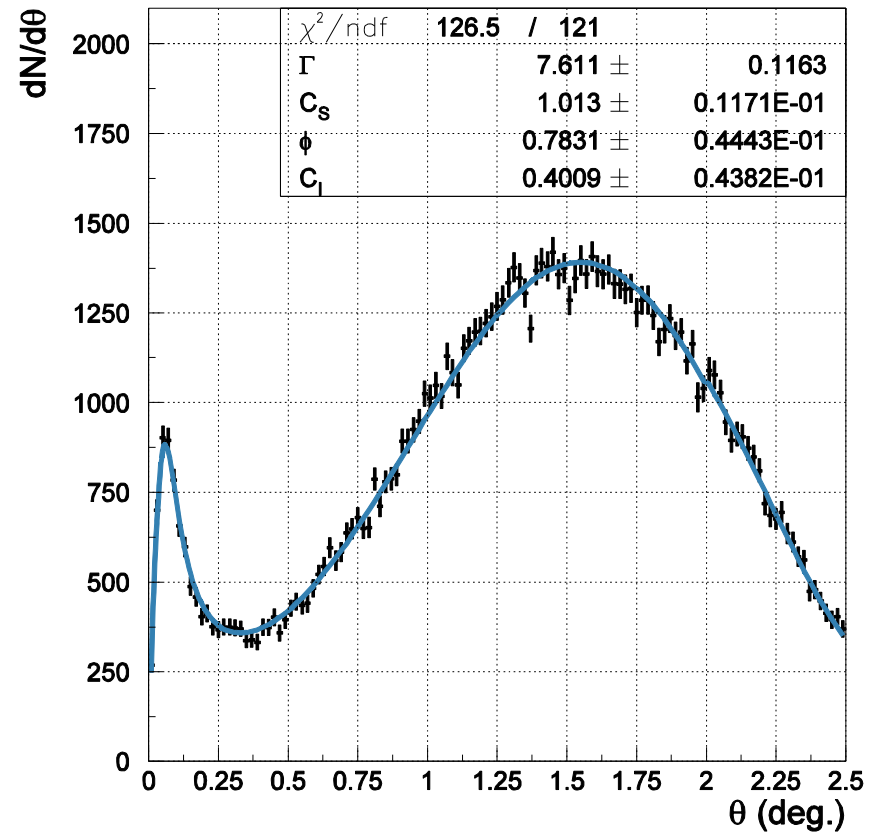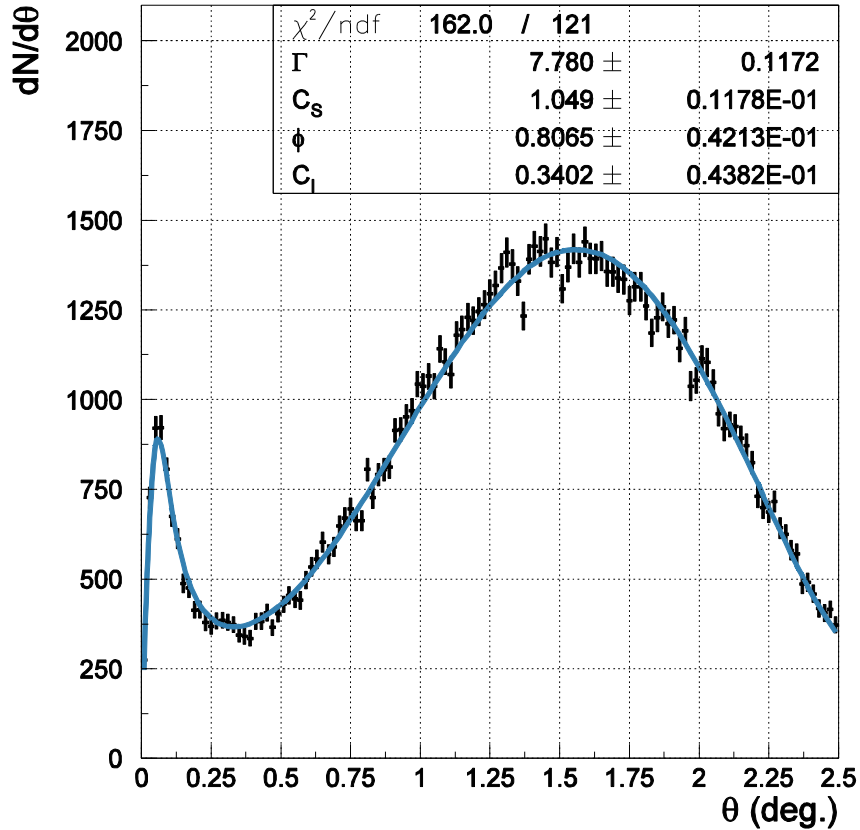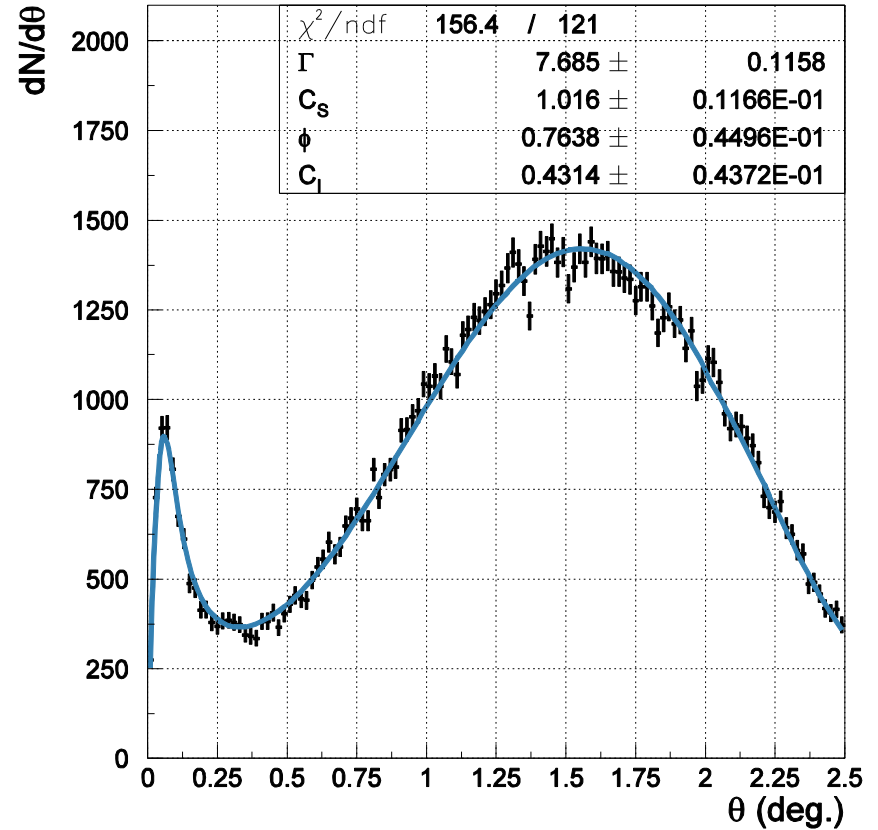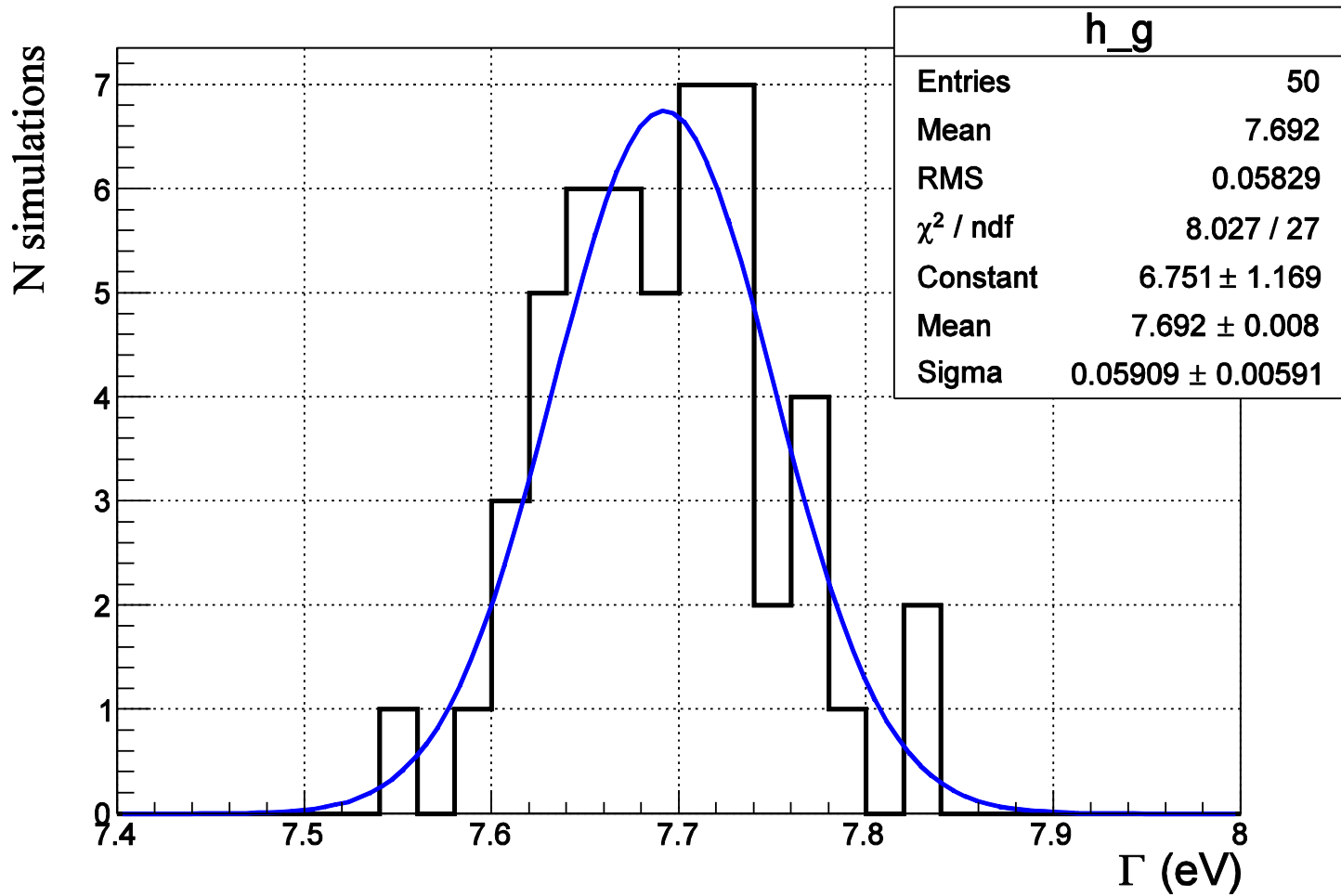(yield from the sum of bins of $m_{\gamma\gamma}$)
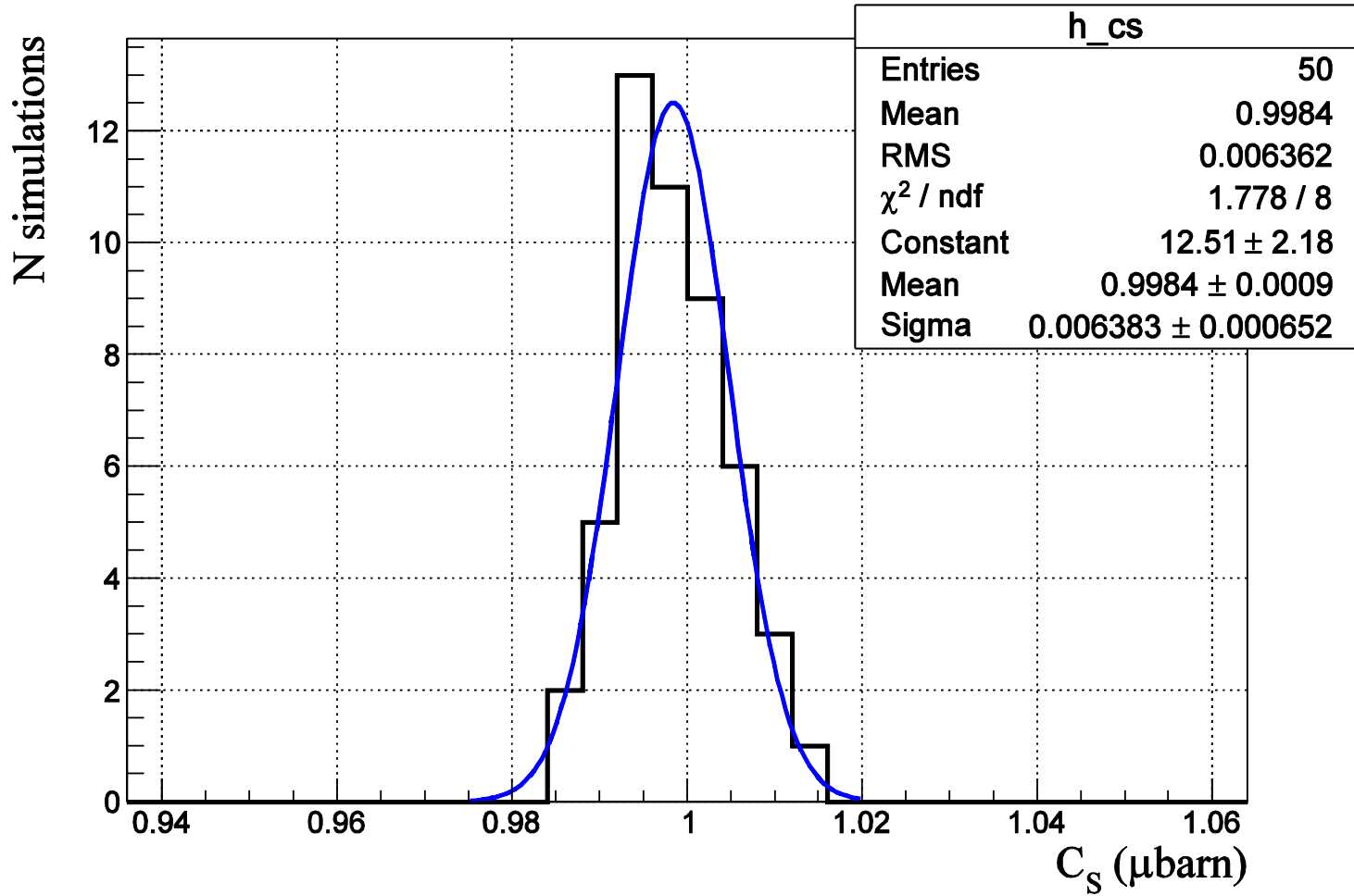
With new background fit correction
(yield from the sum of bins of $m_{\gamma\gamma}$)

Γ distribution of 50 MC runs

h_g	
Entries	50
Mean	7.692
RMS	0.05829
χ^2 / ndf	8.027 / 27
Constant	6.751 ± 1.169
Mean	7.692 ± 0.008
Sigma	0.05909 ± 0.00591

N simulations

Γ (eV)

C_S distribution of 50 MC runs

h_cs	
Entries	50
Mean	0.9984
RMS	0.006362
χ^2 / ndf	1.778 / 8
Constant	12.51 ± 2.18
Mean	0.9984 ± 0.0009
Sigma	0.006383 ± 0.000652

Φ   distribution of 50 MC runs

h_phi	
Entries	50
Mean	0.7702
RMS	0.02342
χ^2 / ndf	12.26 / 15
Constant	8.423 ± 1.463
Mean	0.7714 ± 0.0034
Sigma	0.02369 ± 0.00240

Mc input φ :8 rad

ϕ (rad)

N simulations

C_I distribution of 50 MC runs

h_ci	
Entries	50
Mean	0.4985
RMS	0.01873
χ^2 / ndf	9.167 / 11
Constant	10.43 ± 1.83
Mean	0.5008 ± 0.0020
Sigma	0.01405 ± 0.00143

N simulations

C_I (μbarn)