ATTENUATION OF ELECTROMAGNETIC IONISING RADIATION

Name: .....

Group: .....

Date: .....

1. Goal of the experiment: .....
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2. Radiation source: ……..., energy of photons: ……

3. Measurement of radiation background:
   a) radiation background counting time t' = ….....….....
   b) number of radiation background counts N' = ...
   c) radiation background counting rate $a' \pm \Delta a'$ = ..……..

4. Measurements of the number of counts N_x or counting rate versus absorber layer thickness x (counting time t =.....):

THE FIRST ABSORBER: .....

absorber density $d \pm \Delta d$ = ...

	Absorber thickness x	Number of counts N_x in time t	$a = \frac{N_x - N'}{t}$	Counting rate $a \pm \Delta a$	ln$a$
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Make a graph of the function $a = f(x)$ and $\ln a = f(x)$ for the first absorber.

The absorber properties:

a) half-value layer $HVL \pm \Delta HVL$ = ……..……
b) linear attenuation coefficient $\mu \pm \Delta\mu$ = ……..
c) mass attenuation coefficient $\mu_m \pm \Delta\mu_m$ = ……..

4. Measurements of the number of counts N_x or counting rate versus absorber layer thickness x (counting time t =.....):

THE SECOND ABSORBER: .....

absorber density $d \pm \Delta d$ = ...

	Absorber thickness x	Number of counts N_x in time t	$a = \frac{N_x - N'}{t}$	Counting rate $a \pm \Delta a$	ln$a$
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Make a graph of the function $a = f(x)$ and $\ln a = f(x)$ for the second absorber.

The absorber properties:

a) half-value layer $HVL \pm \Delta HVL$ = ……..……

b) linear attenuation coefficient $\mu \pm \Delta\mu$ = ……..

c) mass attenuation coefficient $\mu_m \pm \Delta\mu_m$ = ……..

Conclusions: .....

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