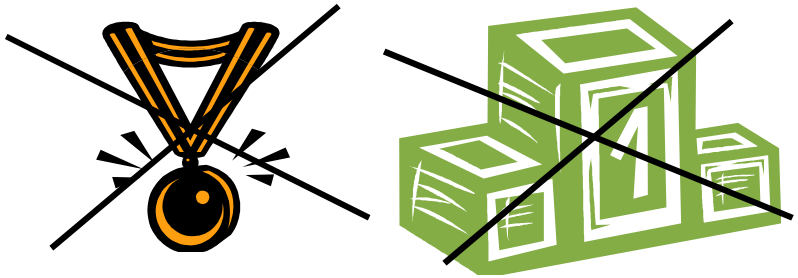
Coincidence-summing
Expected outputs



- No medals, no podium
- Self-evaluation of the method used
- Improvement of these
- Associated uncertainties
- Practical recommendation for users
  - Metrological applications
  - Current measurements

Coincidence-summing preliminary results

26 series of results

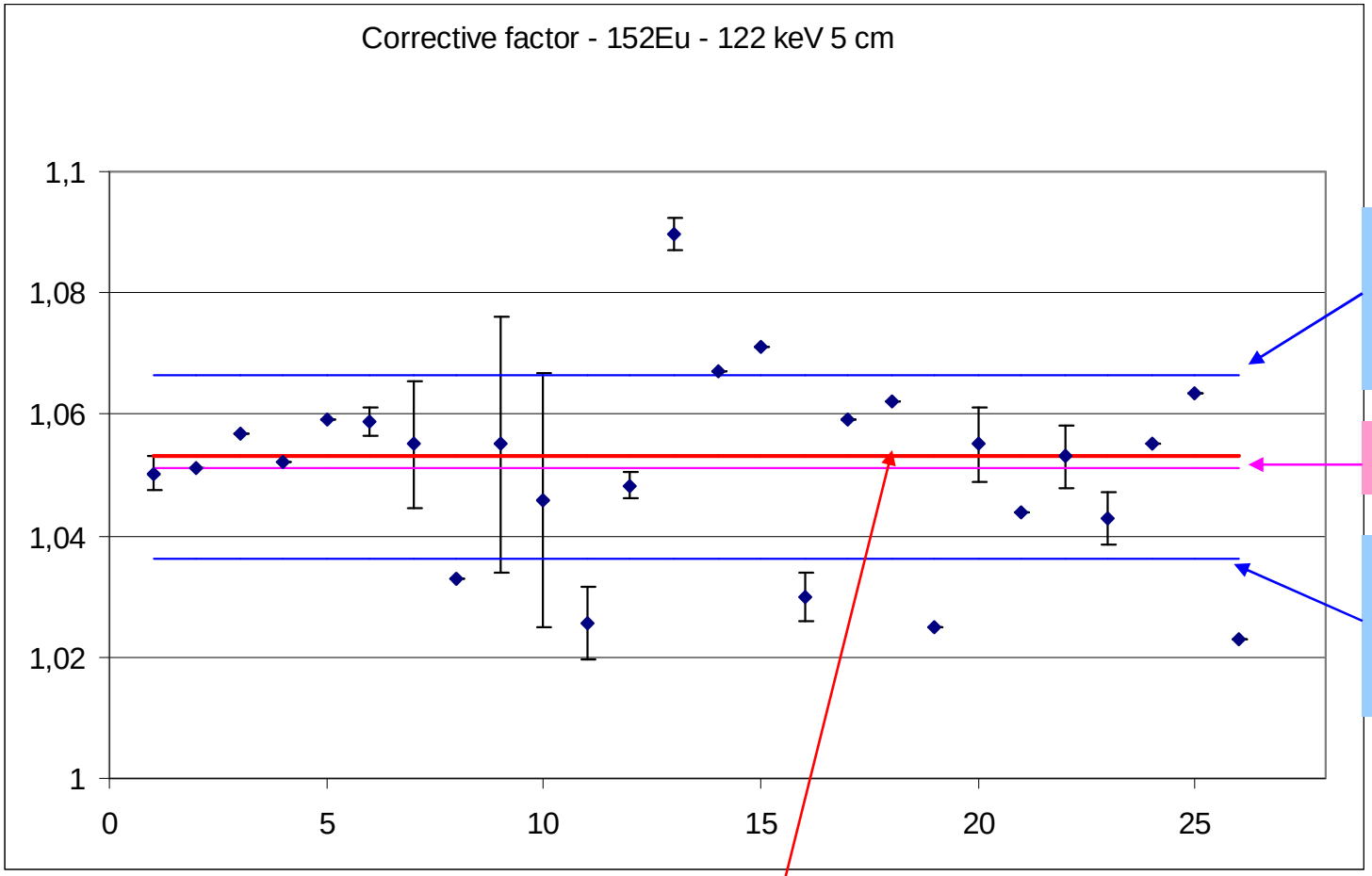
For each energy and distance :

- mean value of the computed corrective factor
- associated standard deviation

Results are presented anonymously

(number)

^{152}Eu – 122 keV at 5 cm



Mean value + 1 standard deviation

Mean value

Mean value - 1 standard deviation

In red « experimental correction »

Experimental correction

1. Efficiency calibration at 25 cm assuming negligible coincidence summing effect
   - Use of ^{137}Cs peak at 662 keV as reference
   - Compute reference area of the multigamma peaks

$$\text{Ref Area}(E, 25) = \frac{\text{PeakArea}(E, 25) \,/\, \text{Efficiency}(E, 25)}{\text{PeakArea}(662, 25) \,/\, \text{Efficiency}(662, 25)} =$$

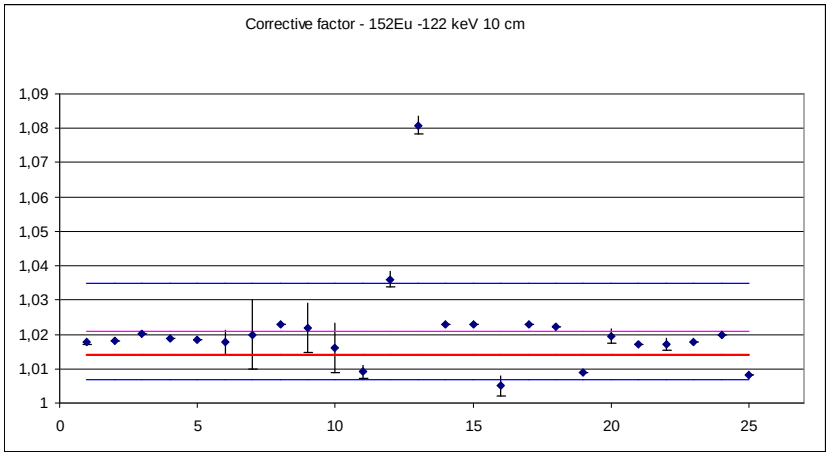
2. For distance d :
   - Compute relative area of the multigamma peaks

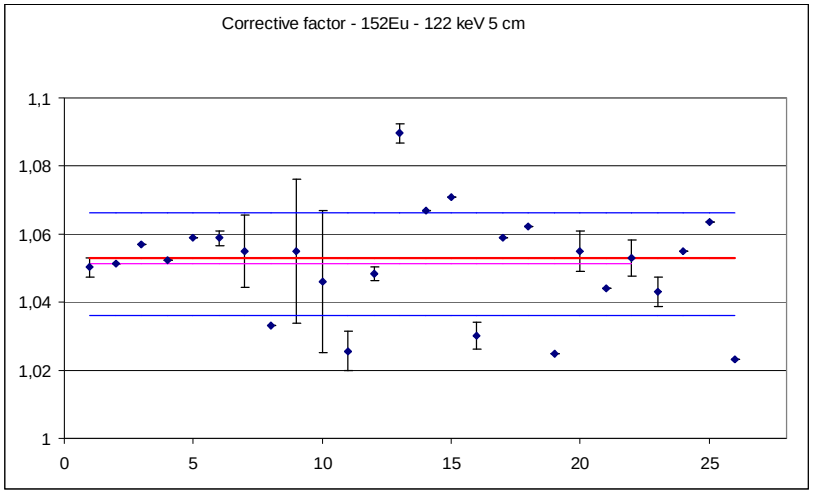
$$\text{Rel Area}(E, d) = \frac{\text{PeakArea}(E, d) \,/\, \text{Efficiency}(E, d)}{\text{PeakArea}(662, d) \,/\, \text{Efficiency}(662, d)} =$$

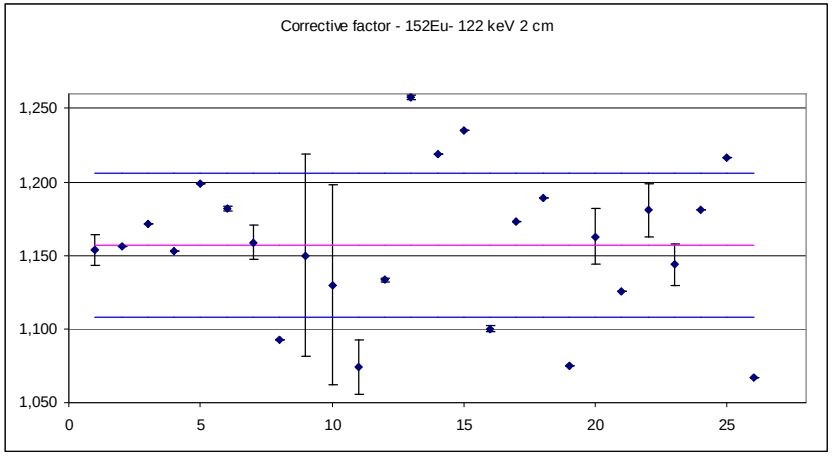
3. Coincidence correction for distance d :

$$\text{Corr}(E, d) = \frac{\text{Ref Area}(E, 25)}{\text{Rel Area}(E, d)}$$

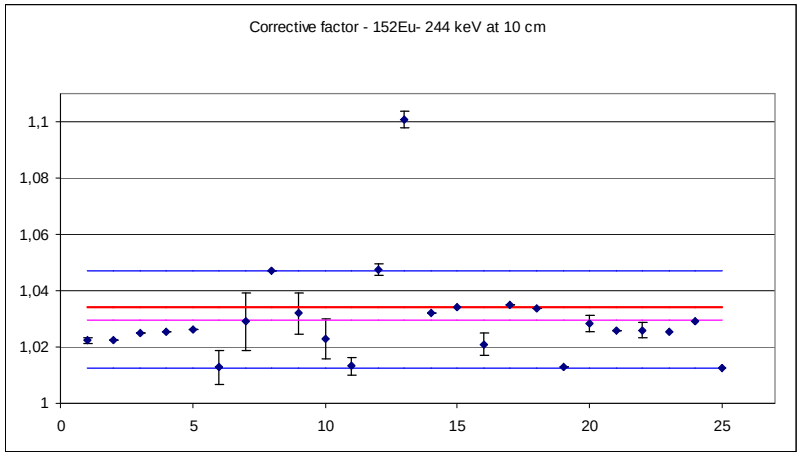
^{152}Eu - 122 keV

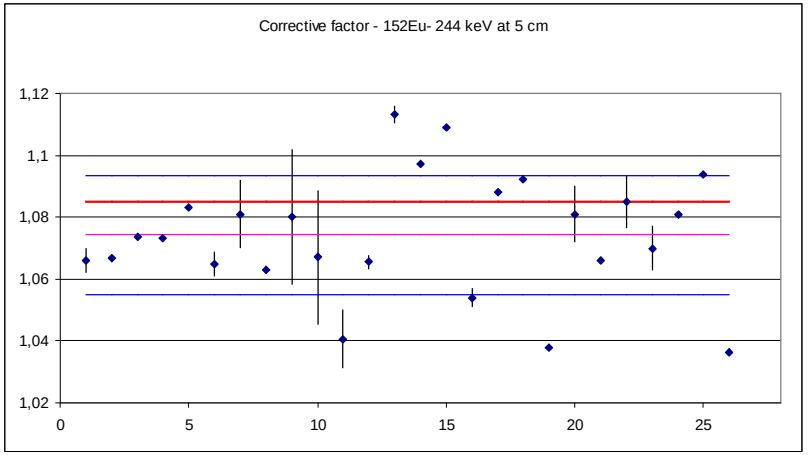


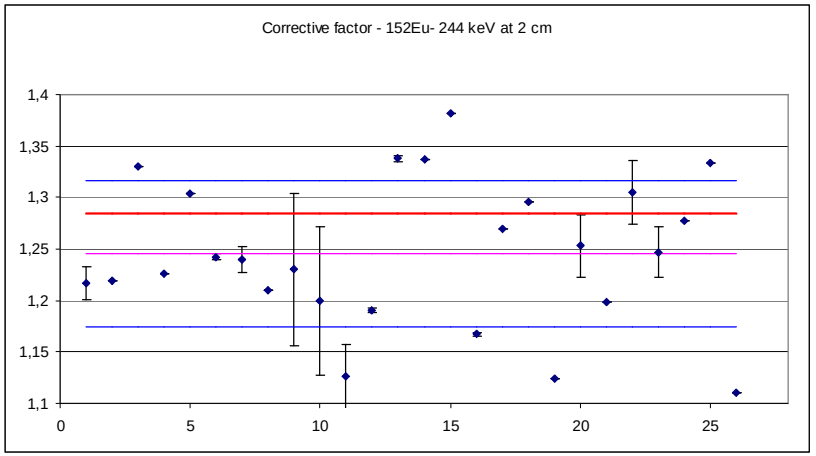




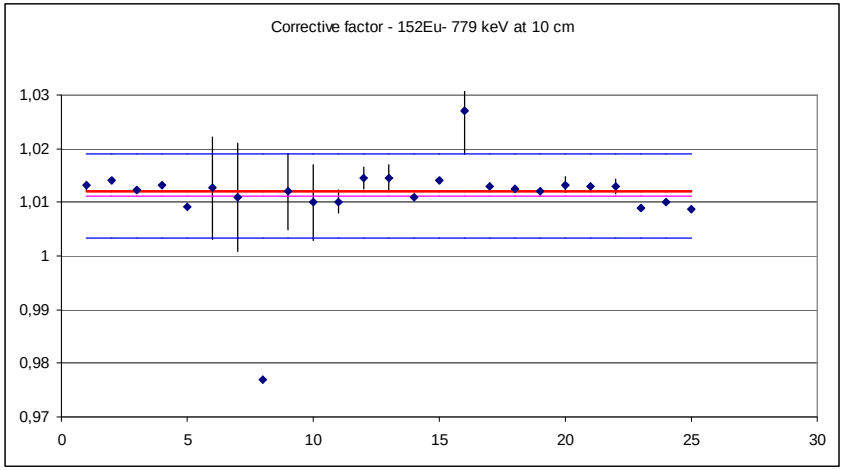
^{152}Eu - 244 keV

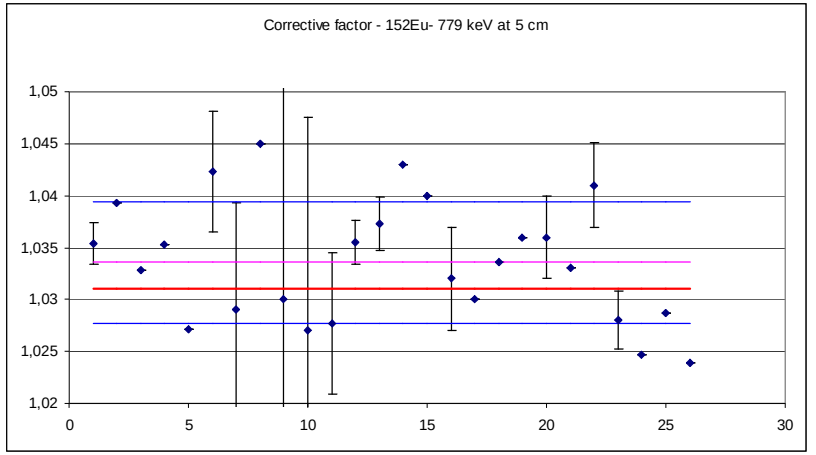


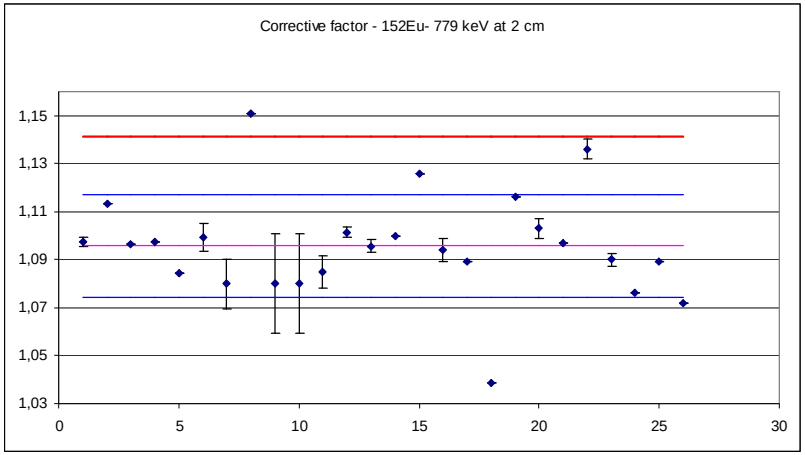




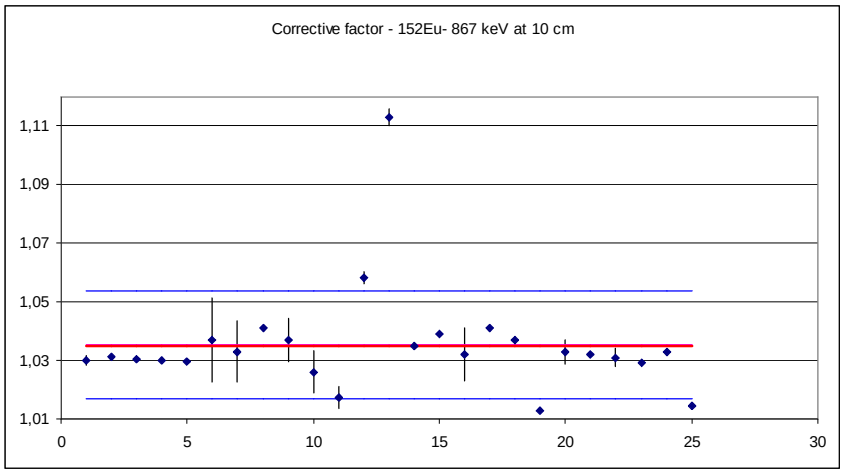
^{152}Eu - 778 keV

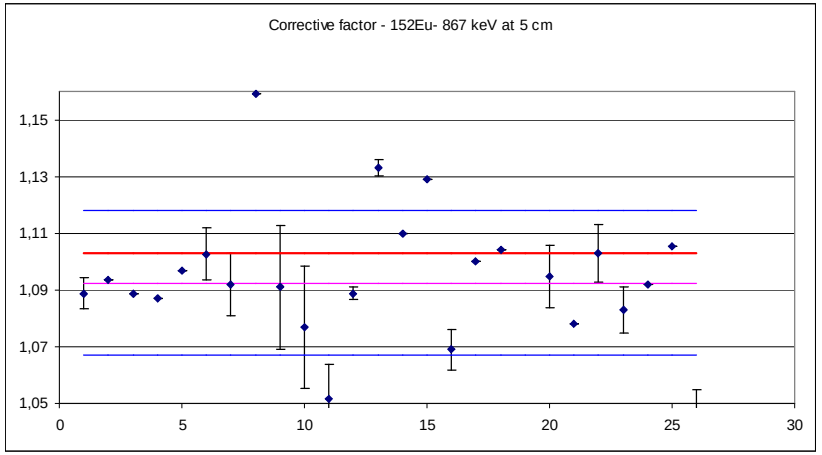


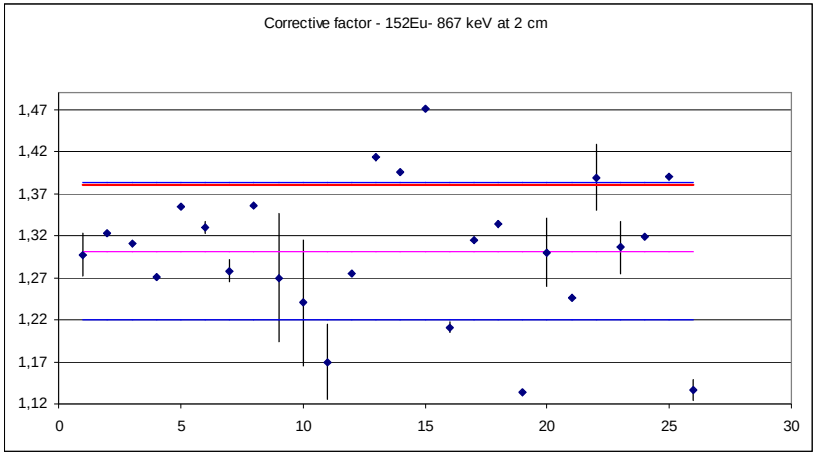




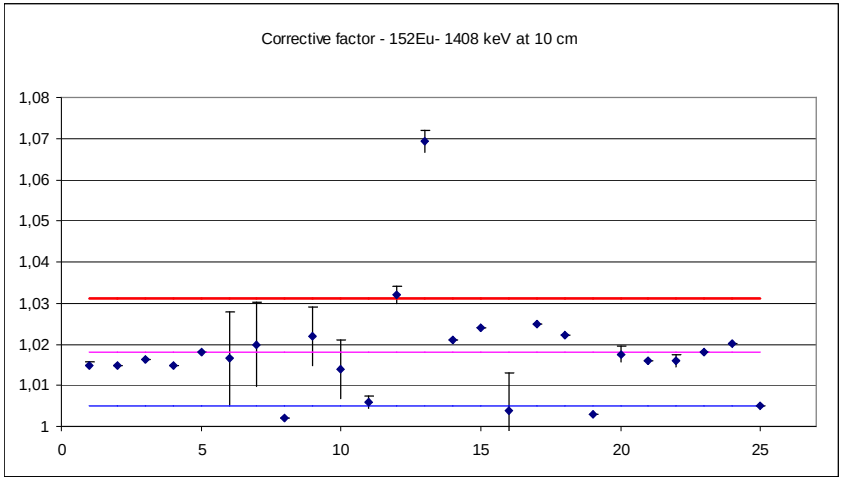
^{152}Eu - 867keV

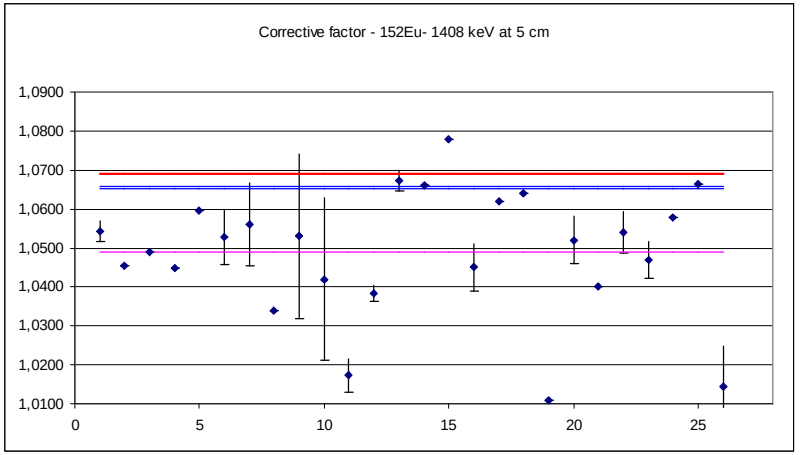


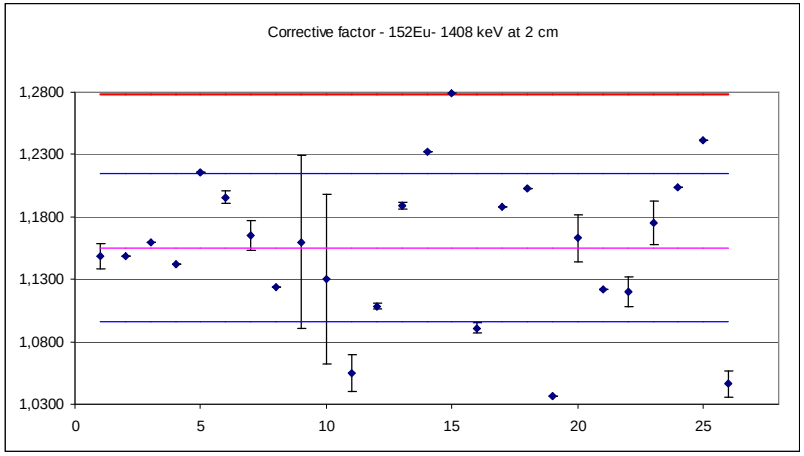




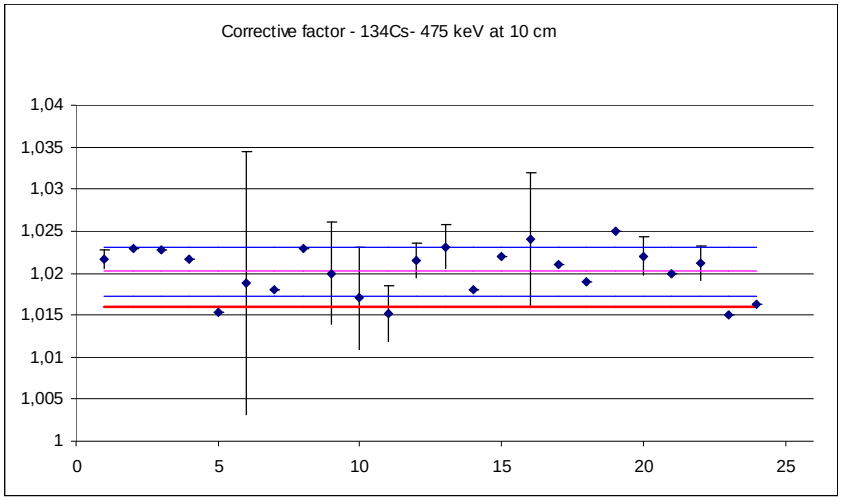
^{152}Eu - 1408 keV

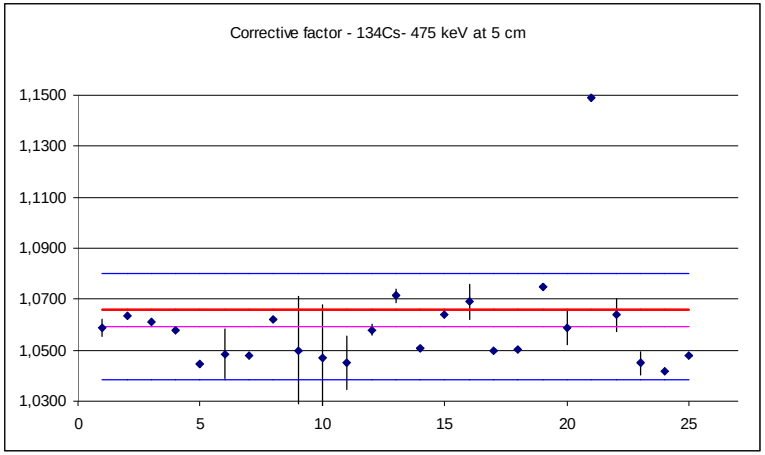


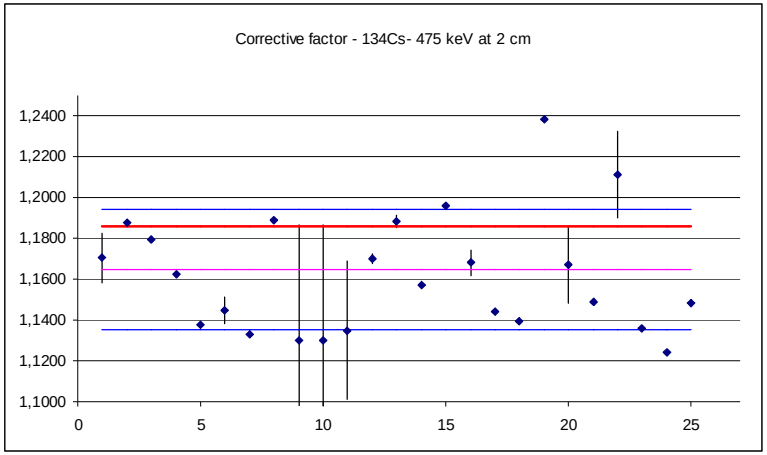




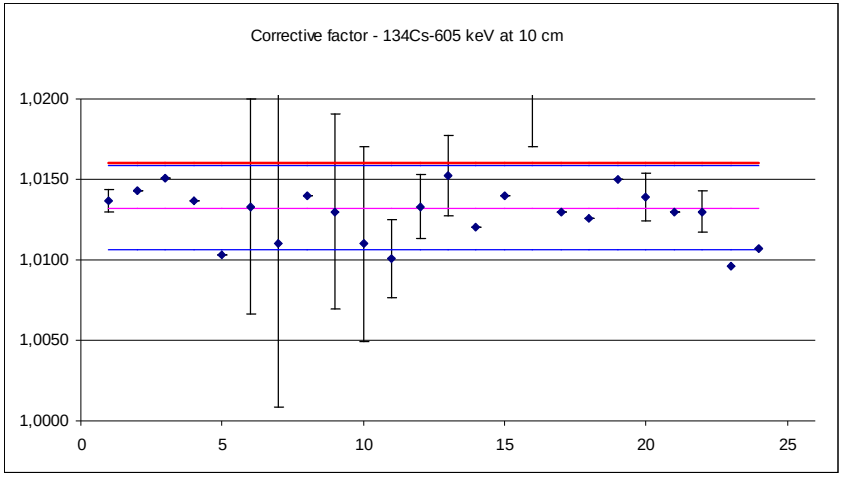
^{134}Cs - 475 keV

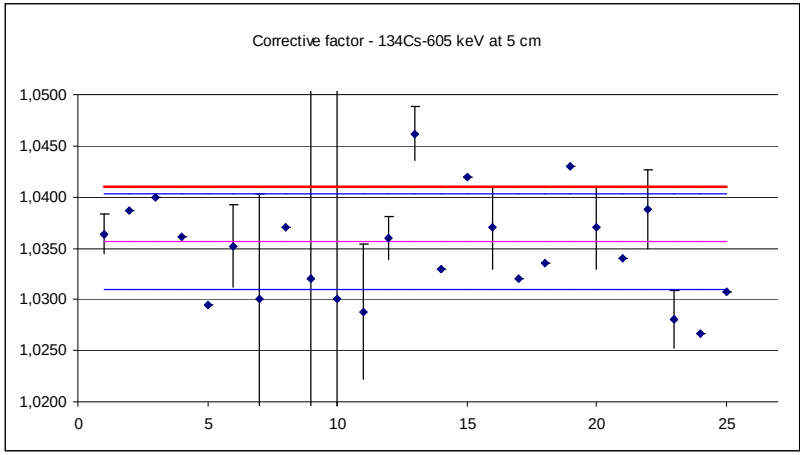


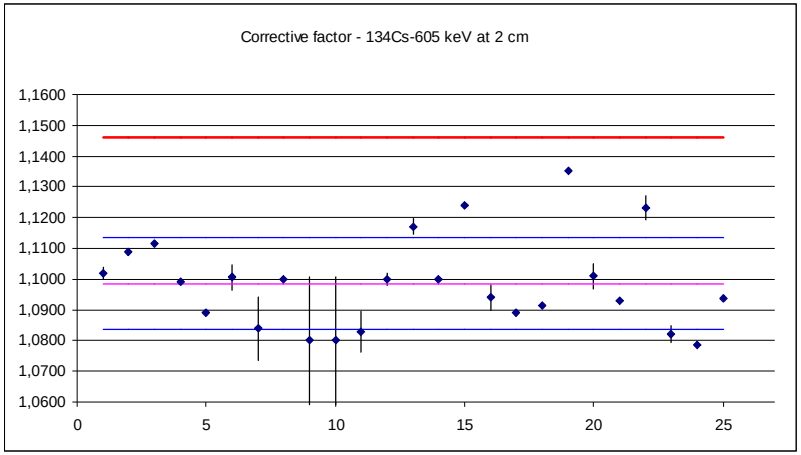




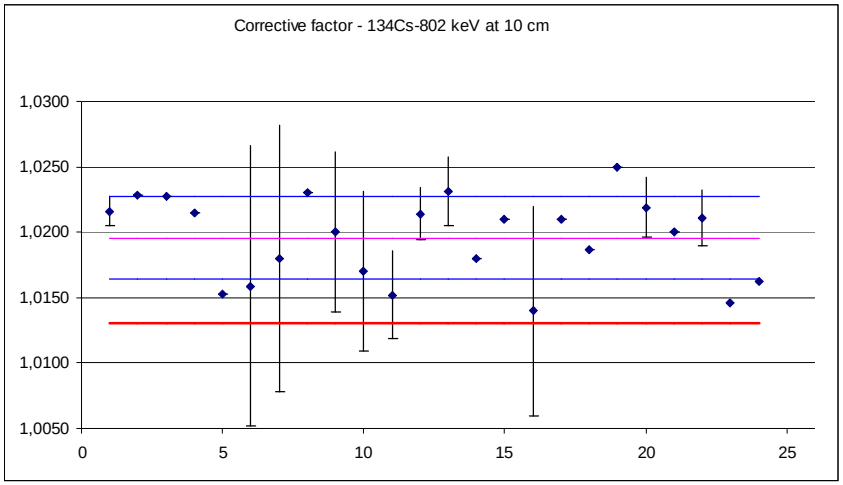
^{134}Cs - 605 keV

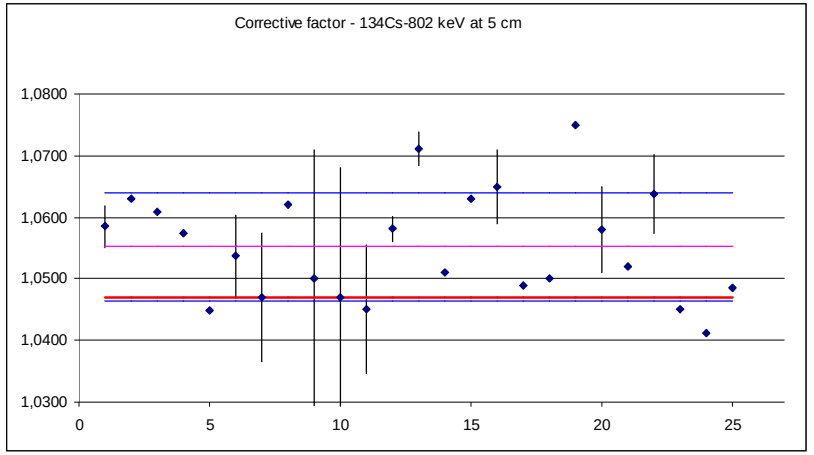


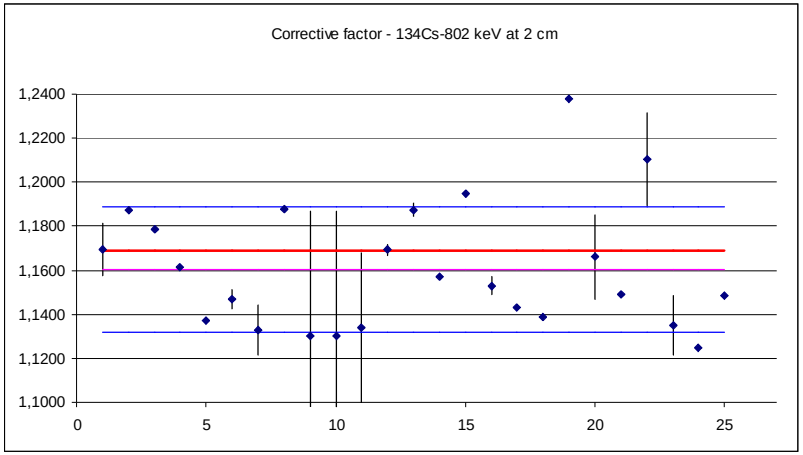




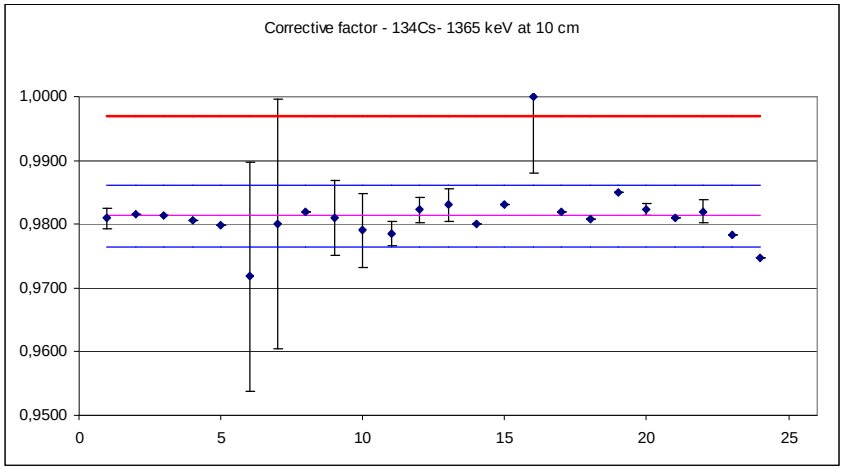
^{134}Cs - 802 keV

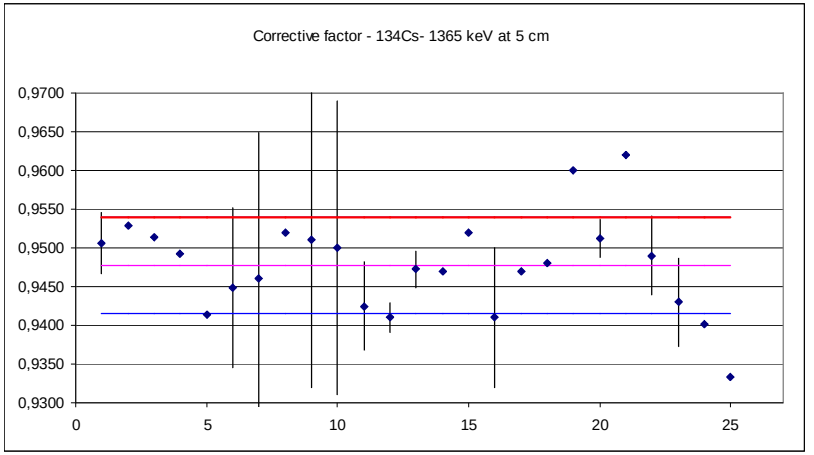


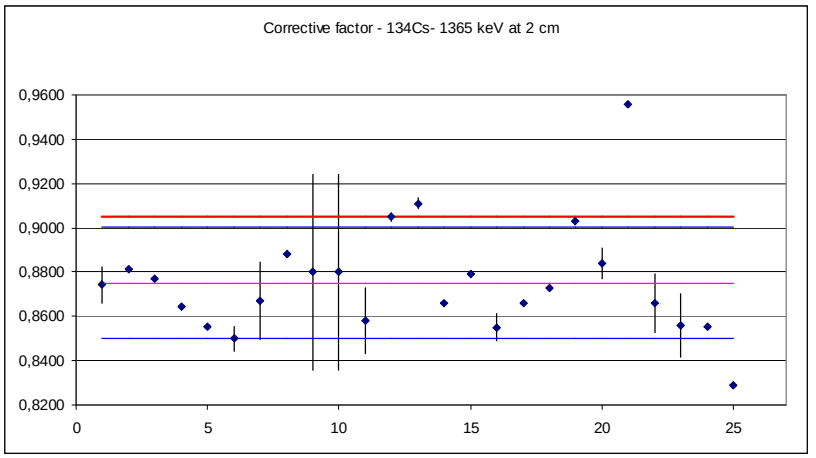




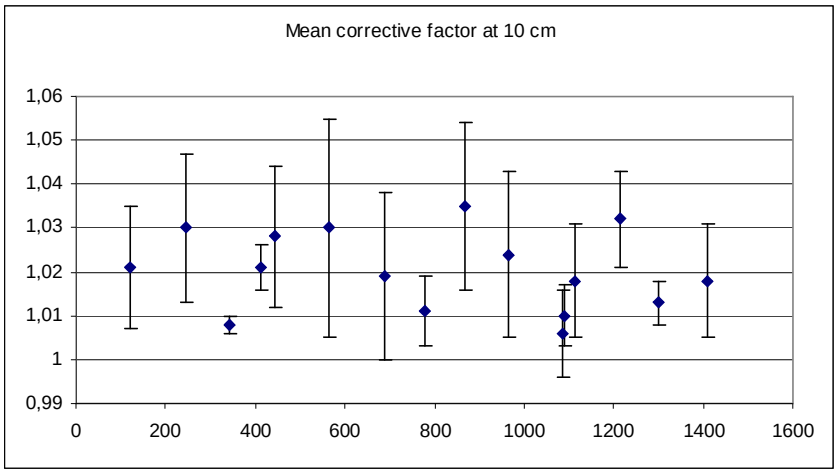
^{134}Cs - 1365 keV

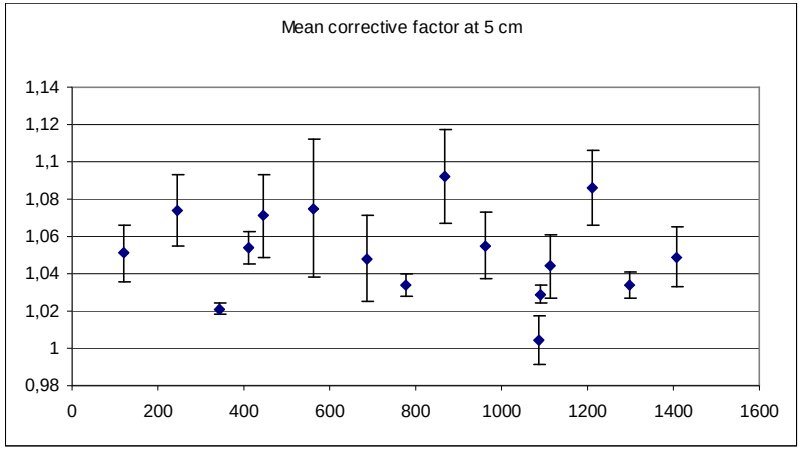


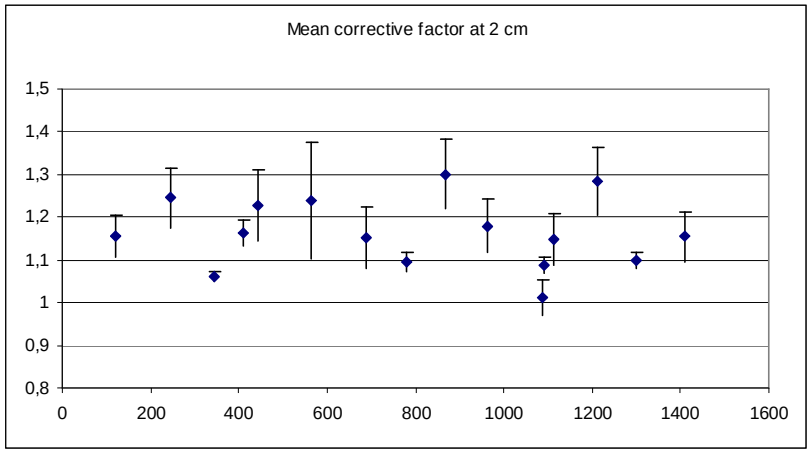




^{134}Eu : 122 to 1408 keV







^{134}Cs : 242 to 1365 keV