

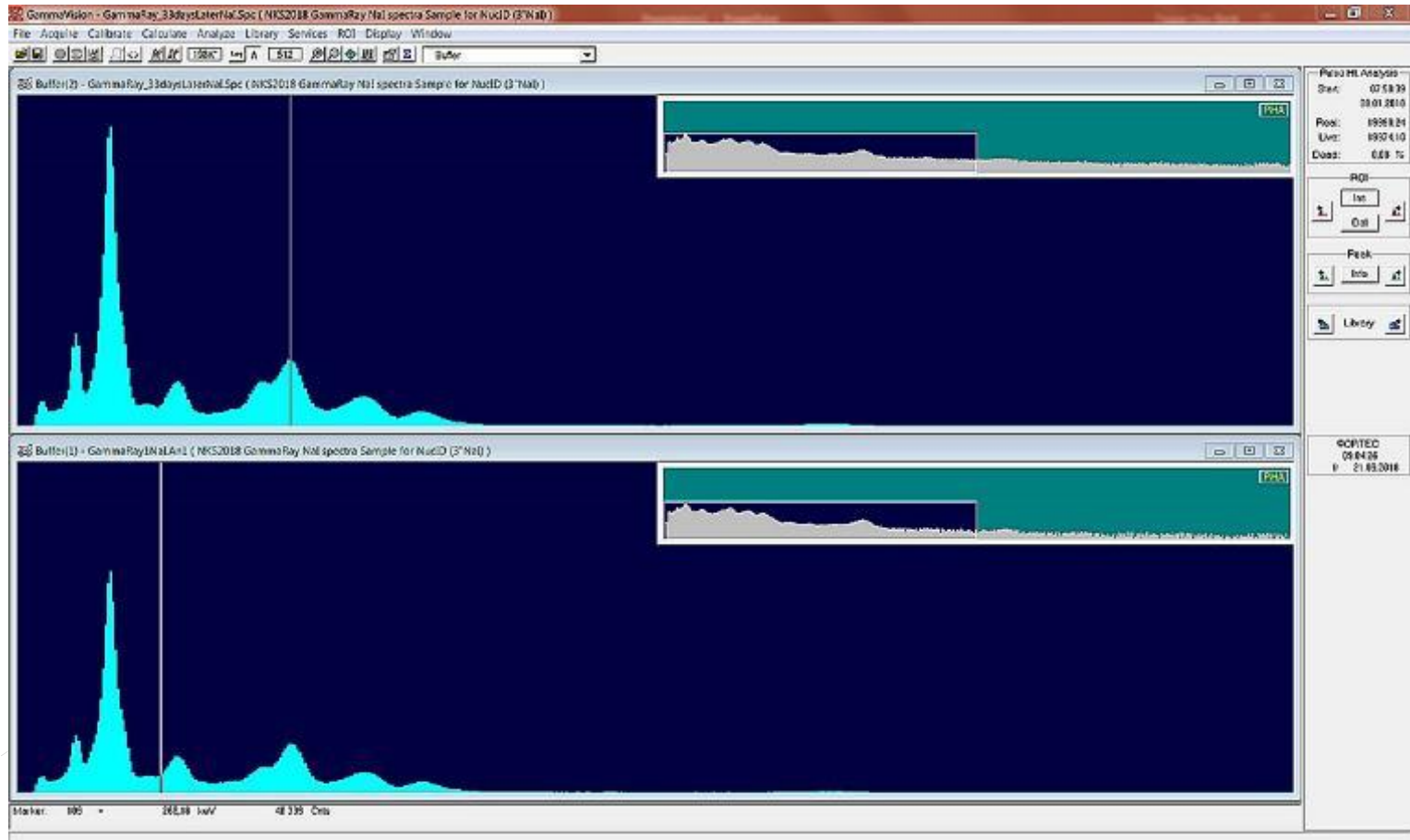


Intercomparison on identification of radionuclides in low resolution gamma spectra

TASK

- From GammaWiki site:
- **Exercise spectra and samples**
- If you are interested in taking part in intercomparison measurements/analyses, please contact us as instructed in the registration form.
- 1. Sediment sample (10 g) for lab analysis (sent to interested participants). Reference date for the sample is 2018-06-18 12:00.
- 2a. Two low resolution gamma spectra for identification
- 2b. Two high resolution gamma spectra for identification

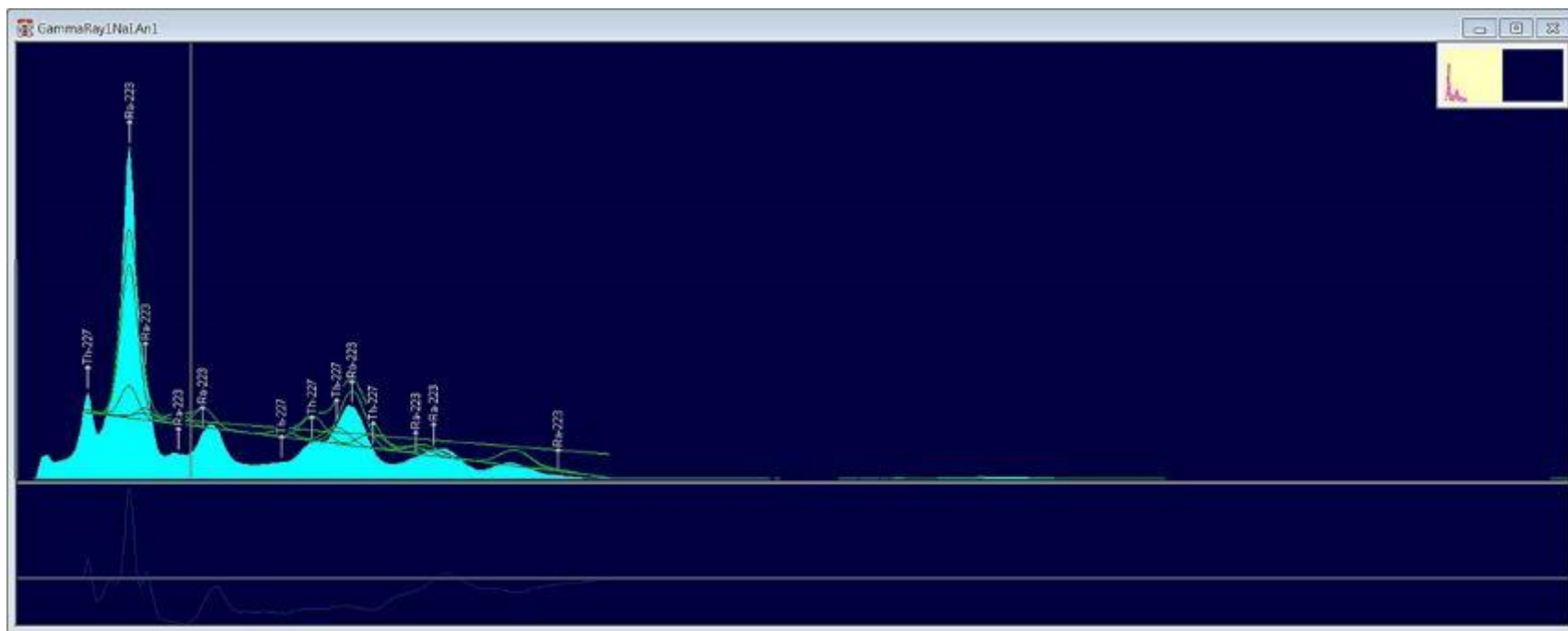
The spectra



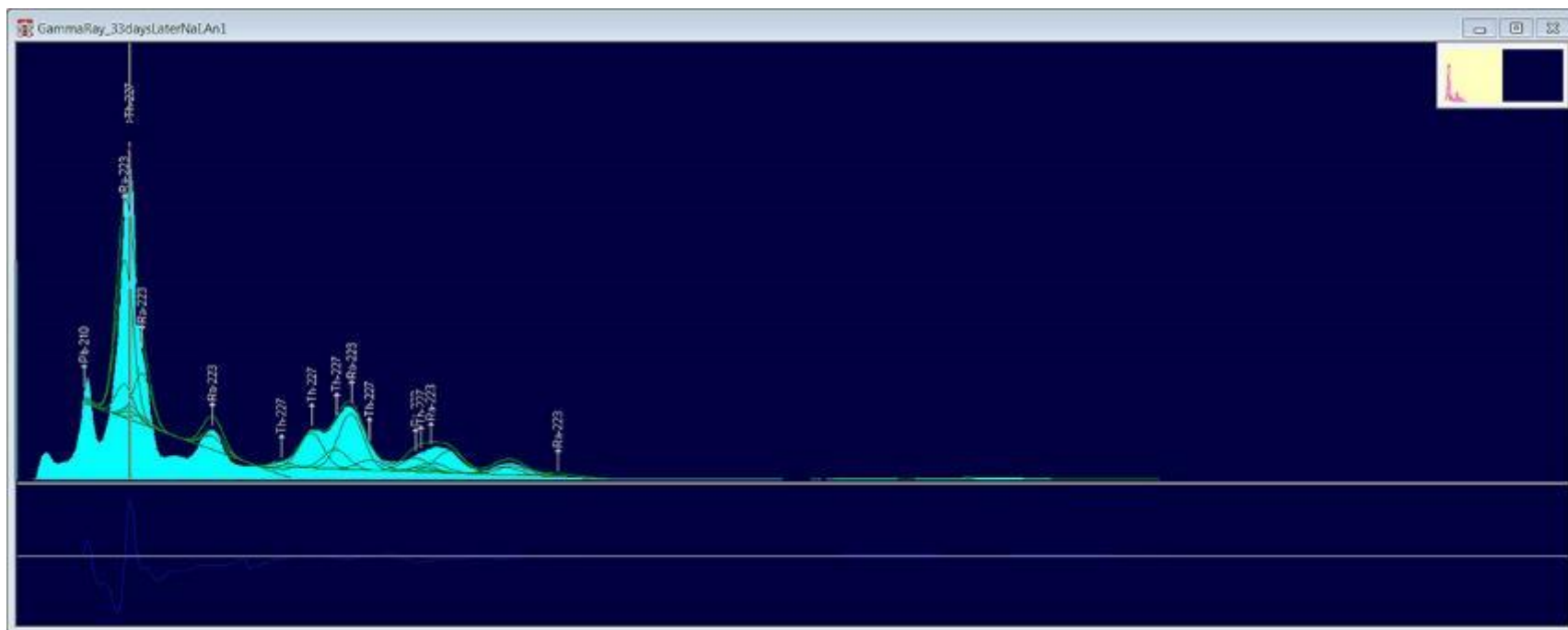
Incomming results

- 1 laboratory with results.
- Results from spectrum GR_2018_S8877.
- Strong Pb-210 peak. The triangular shape at the beginning of the spectrum hints at a strong beta emitter. The reason for the beta source Bi-210. Po-210 also identified by gamma peak 803 keV.
- Results from spectrum of same sample 33 days later.
- Significant peaks from Th-227 and its daughters.
- Comparison of the two spectrums showed the half-life of the present nuclides to be approximately 40 days. Half life Th-227 18.7days, giving reason to believe that there are some of its mother Ac-227 in the sample.

Analyze at IFE. Spectrum Day 1.



Spectrum 33 days later



Results from IFE

- Sample was a smear test from a defect ventilation pipe.
- We wanted to take a search if there was some Ac-227 contamination.
- First spectrum indicated Ra-223 ($T_{1/2}=11$ days) and Th-227 ($T_{1/2}=18$ days).
- Spectrum of sample 33 days later indicated still Ra-223 an Th-227. The amount indicated that the mother Ac-227 ($T_{1/2}=22$ years) was present.

Conclusion from the intercomparison

- Only one participant
- Same conclusion about Ac-227 as IFE.

- Further about low resolution gammaspectrometry:
 - not big interest in this fora?