

Measurement of complex spectra with NaI(Tl), (Example:  $^{133}\text{Ba}$ -spectrum)

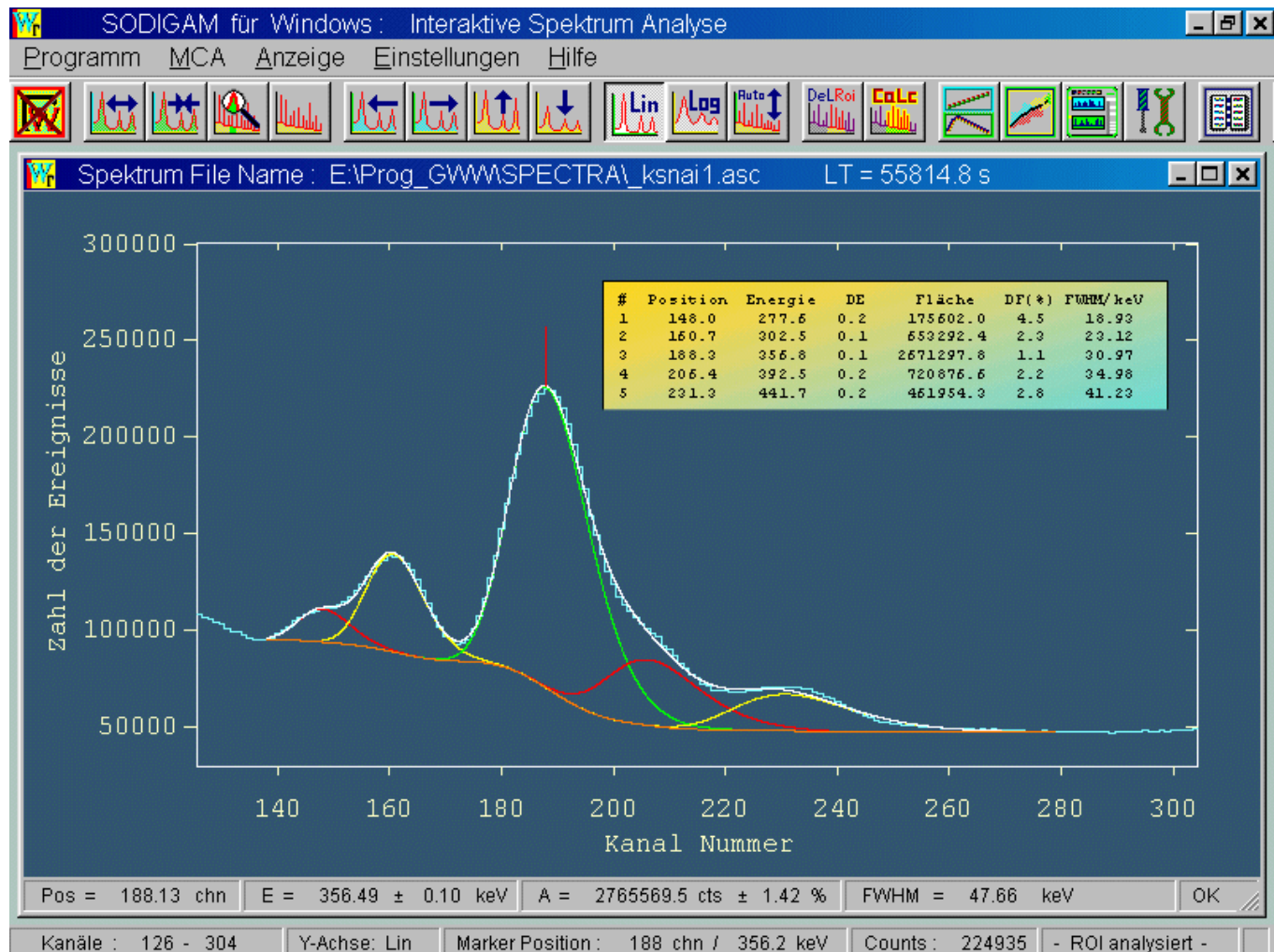


Figure: Analysis of the Ba-133 multiplet around 356 keV

The nuclide Ba-133 is often used in nuclear medicine for the calibration of gamma cameras that are used for I-131 imaging (therefore it is also called “pseudo-iodine”). Because it has peaks in the same region of the spectrum of I-131 and a long half-life, high-activity sources of Ba-133 are an ideal tool for homogeneity calibration measurements.

The narrow multiplet of peaks at 276.4 keV, 302.9 keV and 356.0 keV in the Ba-133 spectrum can be quantitatively and correctly analysed with SODIGAM. The areas of peak at 383.9 keV and that of the coincidence peak at 437.0 keV cannot be used for quantitative analysis because of unknown coincidence probabilities.

The SODIGAM software provides all the tools needed for the quantitative analysis of scintillator spectra, including energy calibration, resolution calibration, efficiency calibrations, nuclide libraries, decay calculation, several units for activities, and others.