

MODIFICATION AND ANALYSIS OF BAEDAECKER'S PROGRAM "SPECTRA" FOR  
GAMMA-RAY SPECTRA OBTAINED BY Ge(Li) SPECTROMETERS

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The computer program SPECTRA<sup>1)</sup> has been modified and applied in case of neutron activation analysis. Procedures for the analysis of gamma-ray spectra, including data smoothing, peak location, centroid and energy determination, and peak integration, are described.

A method for the analysis of partially resolved complex peaks is presented.

The main modifications of original program were:

- 1) The use of new relationship FWHM vs. ENERGY
- 2) The peak analysis in the Compton-edge region
- 3) The use of criterion for the acceptance of "real peaks" on the bases of FWHM and their statistical significance.

The modified program has been applied for the analysis of gamma-ray spectra from complex neutron activation ecological samples. Execution of program has been performed on the CDC-3600 computer and, in average, it took about 0.1 minute per gamma-ray spectrum.

The results, so obtained, were compared with data of careful "hand analysis". The agreement between two sets of data was rather good. Real test of modified program has been done on the basis of data obtained during the IAEA'S INTERCOMPARISON OF METHODS FOR PROCESSING Ge(Li) GAMMA-RAY SPECTRA.

References:

1. Baedaecker P.A., Publication NO 1030, Institute of Geophysics and Planimetry Physics, University of California, Los Angeles.
2. Filby R.H. et al., Gamma-Ray Energy Tables for Neutron Activation Analysis, NSUNRC - 1970, 97 (2).