

PACKAGE ID - 000742IBMPC00 GENAEA

KWIC TITLE - Alpha Energy Spectra Automated System

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LIMITATION CODE -UNL **AUDIENCE CODE** - UNL

COMPLETION DATE - 06/01/1990 **PUBLICATION DATE** - 06/01/1990

DESCRIPTION - GENAEA is a general alpha energy analysis (AEA) program for data reduction. GENAEA determines peak quantities, relative abundance, and, where identification can be made, individual isotopic activities. Also, GENAEA can automatically calibrate an instrument and allow for detector efficiency.

PACKAGE CONTENTS - Software Abstract; Media Directory; WHC-EP-0346; Media Includes Executables, Sample Problem Input and Output, Control Information, Data Libraries;

SOURCE CODE INCLUDED? - No

MEDIA QUANTITY - 1 5.25 Diskette

METHOD OF SOLUTION - GENAEA accepts computer-stored, multichannel-analyzer data that describe the AEA spectra. The spectra are compressed and smoothed to reduce statistical noise found in counting systems and, in particular AEA spectra. A peak search is performed by examining the second derivative of the conditioned spectra. This method finds many peaks and most peaks are eliminated by further testing the derivative slope in the region surrounding the peak. The calculated peak energies are compared to a table of standards for assignment.

COMPUTER - IBM PC

OPERATING SYSTEMS - MS DOS 3.0 or higher

PROGRAMMING LANGUAGES - FORTRAN 77 (98%) ASSEMBLER (2%)

SOURCE CODE AVAILABLE (Y/N) - N

RELATED SOFTWARE - Alpha spectra have to be available from user directed data files such as EG & G Ortec adcam and the Nucleus PCA systems.

TIME REQUIREMENTS - For a 5 peak spectrum, the time ranged from less than 1 minute on an IBM-PS2/70 to 20 minutes on an IBM-PC/XT.

REFERENCES - G.L. Troyer, Automated Calculation of Alpha Energy Spectra, WHC-EP-0346, June 1990.

E S T S C
ENERGY SCIENCE & TECHNOLOGY SOFTWARE CENTER
SOFTWARE ABSTRACT

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ABSTRACT STATUS - Released AS-IS 9/29/94.

SUBJECT CLASS CODE - VO

KEYWORDS -

COMPUTER PROGRAM DOCUMENTATION
G CODES
ALPHA SPECTRA
MULTI-CHANNEL ANALYZERS
ALPHA DETECTION
ABUNDANCE
ISOTOPES

EDB SUBJECT CATEGORIES -

990200 663200 440103

SPONSOR - DOE/RW

PACKAGE TYPE - AS - IS