PHYWE

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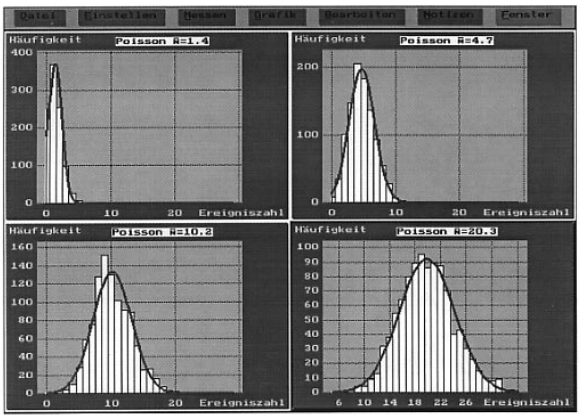
HANDBOOK

COBRA

Statistics of the radioactive decay



All experiments described in this handbook can be performed with the "COBRA-Interface" which has following specific features:

The versatile high performance computer interface basic unit can be extended by means of a series of supplementary modules.

- Intelligent, microprocessor controlled interface for the performance of measurements and experiments in physics, chemistry, biology and technology
- Can be connected directly to any modern computer over the standard serial interface (RS 232) without supplementary cards and without opening the computer housing
- Replaces devices such as 4-channel plotters, xyt-plotters, transient plotters, digital counters, temperature, conductivity, pH, pressure measuring devices, etc.
- No load on the computer power supply due to the interface, thus excluding computer failures due to partial power supply overloads
- High performance, adjustable direct voltage output to provide power for experiments and for programmable power outputs
- Continuous extension of the series of modules and of the software library keeps on providing new applications for the COBRA user

This HANDBOOK can be purchased separately.
It contains the experiments listed below. Please ask for a complete equipment list. Ref No 25206

Handbook • COBRA – Statistics of the radioactive decay • No. 01266.02 • 7 described Experiments

1 Introduction

CBS 1.1 (12006)
Experimental set-up and selection of the radioactive sources

CBS 1.2 (12006)
Basic software settings

2 Experiments and evaluations

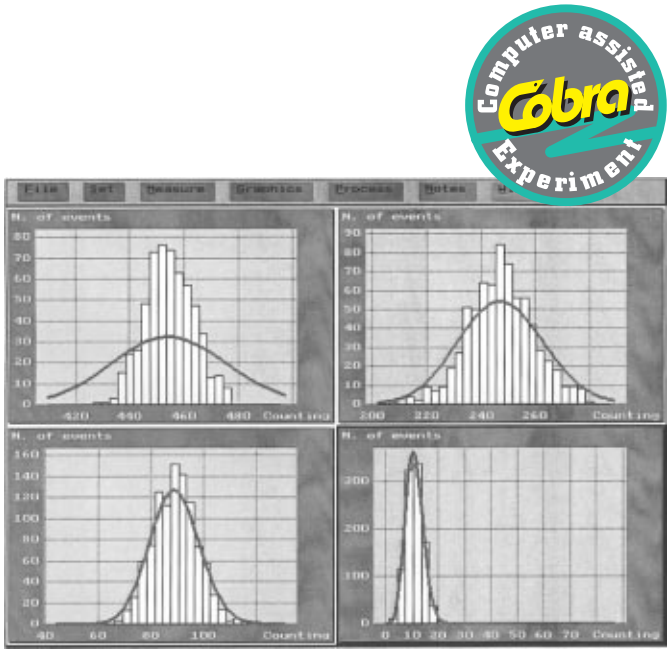
CBS 2.1 (12006)
Number of pulses, average number of pulses and the expected value

CBS 2.2 (12006)
The relationship between the mean value and the variance of the number of pulses

CBS 2.3 (12006)
Poisson's distribution of the number of pulses

CBS 2.4 (12006)
Approximation of the pulse distribution by a Gaussian distribution

CBS 2.5 (12007)
Influence of the dead time of the counter tube on the pulse distribution



Statistical distribution for average pulse rates of 4600, 2500, 900 and 110 pulses/s compared to the theoretical Poisson's distributions (Experiment CBR 2.5)