
Topic Outline

3b1. Spectral Analysis: Prologue

Terminology

Methodology

Types

Terminology

spectral feature	a feature in a spectrum that has significant implications about the event measured by the experiment
background	a spectrum that is usually underlying the desired spectral feature
peak	a spectral feature that has a defined height, position, and half-width
spike	a peak of zero half-width
spectrum analysis	processing a spectrum by a sequence of mathematical steps in order to accentuate spectral features (peaks)

Methodology

Spectral analysis is typically done by computer software after the spectrum has been stored.

Spectral analysis via software can be computer intensive!

Spectral analysis should be done with care!

Types

Massaging Spectra

Background Subtraction

Smoothing

Others

Differentiation/Integration

Deconvolution

These **all** change the signals in the original spectrum.

Evaluating Spectral Features

Peak Fitting

Comparing Spectra Mathematically

These do **not** change the signals in the spectrum