

Combined peak-fitting of multiple spectra

Last revised: 2013-11-09

Sub-folder containing the data files (empty for root): `DataFolder := "data"`

▾ Helper functions

▾ Archive

===== Experimental data =====

```
( Files Settings ) := [ ( "sp4.corrected" ) ( YSCALE 0.00001 )  
                      ( "sp5.corrected" ) ( BEGIN 460 )  
                      ( "sp6.corrected" ) ( END 520 ) ]
```

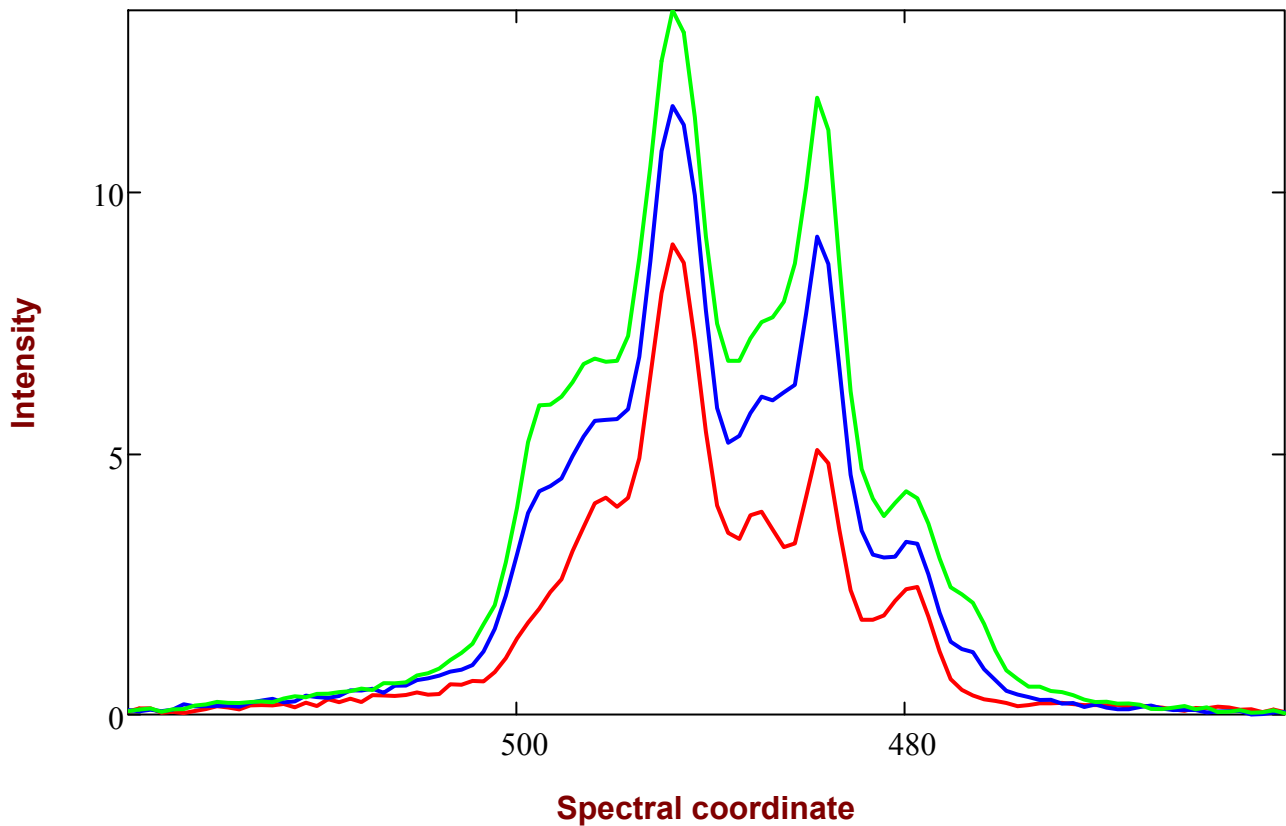
[Click here for help](#)

`Spectrum := 2`

`Reverse := YES`

`Colors := (RED BLUE GREEN MAGENTA)`

▾ Processing



===== Guess values =====

Click [here](#) for info about the peak and baseline functions. Note that Width can be either a matrix or a vector (if the linewidth doesn't change accross spectra).

PeakFun := Lorentz

BkgFun := ConstBkg

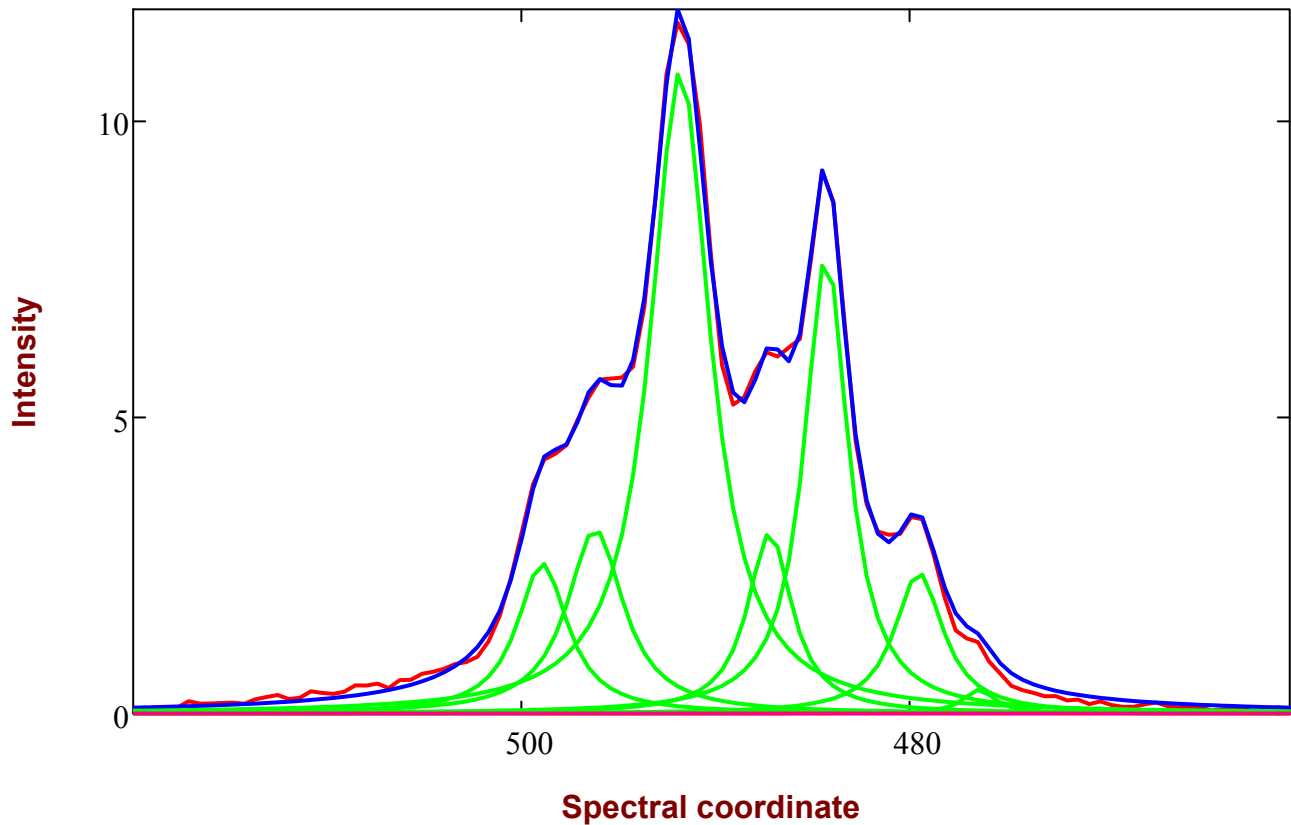
(Position Width Amplitude Background) :=	$\begin{pmatrix} 476.5 \\ 479.597 \\ 484.353 \\ 487.259 \\ 491.855 \\ 496.226 \\ 498.941 \end{pmatrix}$	$\begin{pmatrix} 1 & 2 & 2 \\ 2.306 & 3.046 & 3 \\ 2.424 & 2.715 & 2.613 \\ 2.254 & 2.763 & 3.52 \\ 3.52 & 3.723 & 3.782 \\ 3.464 & 3.531 & 4.42 \\ 3.092 & 3.157 & 2.902 \end{pmatrix}$	$\begin{pmatrix} 0.1 \\ 2.044 \\ 4.263 \\ 2.01 \\ 8.492 \\ 2.457 \\ 0.716 \end{pmatrix}$
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Spectrum := 2

Colors := (RED BLUE GREEN MAGENTA)

▢ Processing

FOM = 3.052·%



===== **Constraints** =====

$100 \cdot A > 0$

$100 \cdot \Gamma > 0$

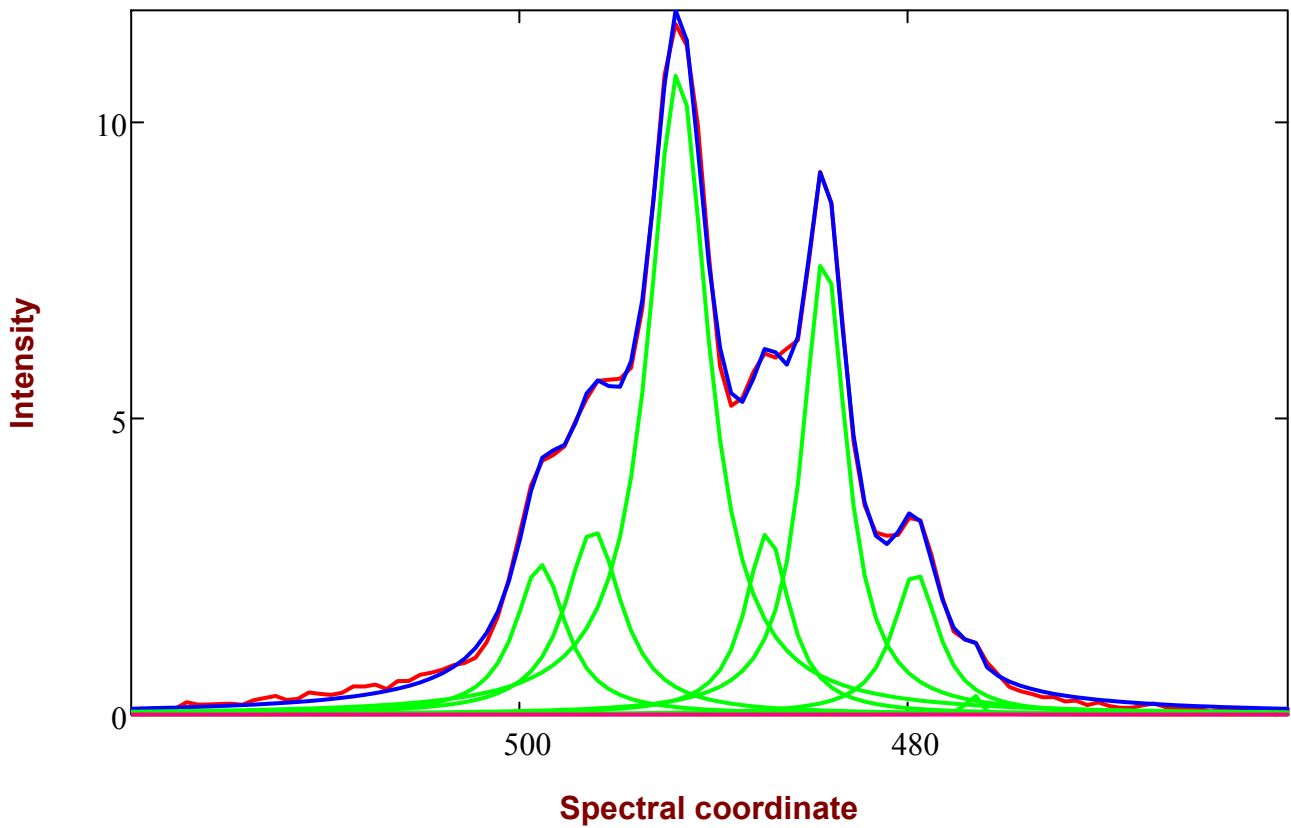
A denotes the matrix of amplitudes, **Γ** the matrix of linewidths, **C** the vector of center positions, and **B** the matrix of baseline parameters.

===== **Optimized result** =====

Spectrum := 2

(Position Width Amplitude Background) =	$\begin{pmatrix} 476.748 \\ 479.667 \\ 484.347 \\ 487.284 \\ 491.856 \\ 496.223 \\ 498.933 \end{pmatrix}$	$\begin{pmatrix} 1.225 \times 10^{-15} & 0.578 & 2.166 \\ 2.324 & 2.852 & 3.089 \\ 2.396 & 2.725 & 2.816 \\ 2.266 & 2.77 & 3.363 \\ 3.507 & 3.71 & 3.836 \\ 3.484 & 3.55 & 4.252 \\ 3.1 & 3.173 & 2.941 \end{pmatrix}$
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FOM = 2.667·%



All curves related to the selected spectrum were written to the file "sp.dat" in the following order:

- (1) X**
- (2) Y**
- (3) Total modeled curve (sum of peaks and baseline)**
- (4) Baseline**
- (5) Peaks (baseline shift included)**

===== End of Program =====