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Predefined Fit Curves Equations

All predefined Fit Curves are listed in this table. You also can specify custom fit equation. Unlike custom fit equations these curves can be adjusted with mouse on Fit Plot.

Name	Formula	Parameters Meaning	Additional Properties
Line	$y = a x + b$	*a* — linear *b* — constant	
Parabola	$y = a x^2 + b x + c$	*a* — quadratic *b* — linear *c* — constant	Vertex: $x_0 = -\frac{b}{2a}$ $y_0 = c - \frac{b^2}{4a}$
Spline	Natural cubic spline, on each *i*-th piece: $y_i = a_i + b_i x + c_i x^2 + d_i x^3$	*xN* — anchor point x-coordinates *yN* — anchor point y-coordinates	
Gaussian	$y = a \exp\left(-\ln(2)\left(\frac{x - x_0}{dx}\right)^2\right)$	*a* — amplitude *dx* — half width at half maximum (HWHM) *x0* — maximum position	Area (integral): $S = \sqrt{\frac{\pi}{\ln 2}}\, a\, dx$ Standard deviation: $\sigma = \frac{dx}{\sqrt{2 \ln 2}}$
Gaussian-A (area-normalized)	$y = \sqrt{\frac{\ln 2}{\pi}}\, \frac{a}{dx} \exp\left(-\ln(2)\left(\frac{x - x_0}{dx}\right)^2\right)$	*a* — area (integral) *dx* — half width at half maximum (HWHM) *x0* — maximum position	Amplitude: $A = \sqrt{\frac{\ln 2}{\pi}}\, \frac{a}{dx}$ Standard deviation: $\sigma = \frac{dx}{\sqrt{2 \ln 2}}$
Lorentzian	$y = a \frac{1}{1 + \left(\frac{x - x_0}{dx}\right)^2}$	*a* — amplitude *dx* — half width at half maximum (HWHM) *x0* — maximum position	Area (integral): $S = \pi\, a\, dx$
Lorentzian-A (area-normalized)	$y = \frac{a}{\pi\, dx} \frac{1}{1 + \left(\frac{x - x_0}{dx}\right)^2}$	*a* — area (integral) *dx* — half width at half maximum (HWHM) *x0* — maximum position	Amplitude: $A = \frac{a}{\pi\, dx}$

Name	**Formula**	**Parameters Meaning**	**Additional Properties**
Gauss Derivative	$y=-2\ln\left(2\right)\frac{a\left(x-x_0\right)}{dx^2}\exp\left(-\ln\left(2\right)\left(\frac{x-x_0}{dx}\right)^2\right)$	Parameters are the same as for original Gaussian: *a* — amplitude *dx* — half width at half maximum (HWHM) *x0* — center position	Area of original Gaussian (second integral): $S=\sqrt{\frac{\pi}{\ln 2}}\,a\,dx$ Standard deviation: $\sigma=\frac{dx}{\sqrt{2\ln 2}}$ Peak-to-peak horizontal: $p_x=\sqrt{\frac{2}{\ln 2}}\,dx$ Peak-to-peak vertical: $p_y=2\sqrt{\frac{2\ln 2}{e}}\,\frac{a}{dx}$
Lorentz Derivative	$y=-2a\frac{x-x_0}{dx^2}\left(1+\left(\frac{x-x_0}{dx}\right)^2\right)^{-2}$	Parameters are the same as for original Lorentzian: *a* — amplitude *dx* — half width at half maximum (HWHM) *x0* — center position	Area of original Lorentzian (second integral): $S=\pi a\,dx$ Peak-to-peak horizontal: $p_x=\frac{2}{\sqrt{3}}\,dx$ Peak-to-peak vertical: $p_y=\frac{3\sqrt{3}}{4}\,\frac{a}{dx}$

See Also

- Nonlinear Curve Fitting: Fit Plot
- Using Spline for Baseline Subtraction
- Guessing Peaks