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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	$y = ax + b$	a — linear b — constant	
Parabola	$y = ax^2 + bx + c$	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) x_0 — maximum position	Area (integral): Standard deviation: $S = \sqrt{\frac{\pi}{2 \ln 2}} a dx$
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) x_0 — maximum position	Amplitude: Standard deviation: $\sigma = \sqrt{\frac{\ln 2}{2 \ln 2}} \frac{a}{dx}$
Lorentzian	$y = a \frac{1}{1 + \left(\frac{x-x_0}{dx} \right)^2}$	a — amplitude dx — half width at half maximum (HWHM) x_0 — 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) x_0 — maximum position	Amplitude: $A = \frac{a}{\pi dx}$

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

See Also

- [Nonlinear Curve Fitting: Fit Plot](#)
- [Using Spline for Baseline Subtraction](#)
- [Guessing Peaks](#)

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