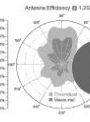
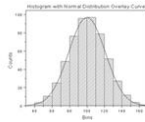


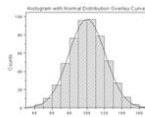
Function List of Fitting Function Library App





No.	Function Name	Formula
1	FitConvExp2	$y = y_0 + f(x) * h(x) = y_0 + \frac{A_1}{t_1} e^{\frac{1}{2} \left(\frac{w}{t_1}\right)^2 \frac{x-xc}{t_1}} \int_{-\infty}^{z_1} \frac{1}{\sqrt{2\pi}} e^{-\frac{\tau^2}{2}} d\tau + \frac{A_2}{t_2} e^{\frac{1}{2} \left(\frac{w}{t_2}\right)^2 \frac{x-xc}{t_2}} \int_{-\infty}^{z_2} \frac{1}{\sqrt{2\pi}} e^{-\frac{\tau^2}{2}} d\tau$ <p>where $f(x) = \frac{A_1}{t_1} e^{-\frac{x}{t_1}} + \frac{A_2}{t_2} e^{-\frac{x}{t_2}}$, $h(x) = \frac{1}{\sqrt{2\pi}w} e^{-\frac{(x-xc)^2}{2w^2}}$, $z_1 = \frac{x-xc}{t_1}$ and $z_2 = \frac{x-xc}{t_2}$.</p>
2	Gaussian_LorenProd	$y = y_0 + \frac{Aw^2 e^{-\frac{4(1-s)\ln(2)(x-xc)^2}{w^2}}}{4s(x-xc)^2 + w^2}$
3	CrossWLF	$y = \frac{\eta_0}{1 + \left(\frac{\eta_0 x}{s}\right)^{1-n}}$ <p>where $\eta_0 = D_1 e^{-\frac{A_1(T-T_a)}{A_2+T-T_a}}$.</p>
4	CrossWLFMod	$y = \frac{\eta_0}{1 + \left(\frac{\eta_0 x}{s}\right)^{1-n}}$
5	CrossWLFeta0	$y = D_1 e^{-\frac{A_1(x-T_a)}{A_2+x-T_a}}$



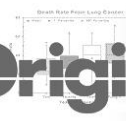
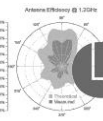
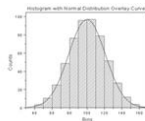


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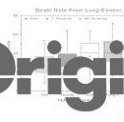
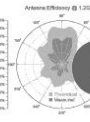
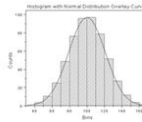
No.	Function Name	Formula
6	FitDistExp2	$y = a \int_0^{\infty} \frac{1}{\sqrt{2\pi w_1}} e^{-\frac{(\tau-x_{c1})^2}{2w_1^2}} \cdot e^{-\frac{x}{\tau}} d\tau + (1-a) \int_0^{\infty} \frac{1}{\sqrt{2\pi w_2}} e^{-\frac{(\tau-x_{c2})^2}{2w_2^2}} \cdot e^{-\frac{x}{\tau}} d\tau$
7	LogisticMod	$\begin{cases} \frac{dy}{dx} = 0, & x < x_0 \\ \frac{dy}{dx} = ry \left(1 - \frac{y}{y_m}\right), & x \geq x_0 \end{cases}$
8	NMR1HTitration	$y = \frac{y_0}{2} \left(\left(1 + \frac{x}{x_h} + \frac{1}{K_a x_h}\right) - \sqrt{\left(1 + \frac{x}{x_h} + \frac{1}{K_a x_h}\right)^2 - \frac{4x}{x_h}} \right)$
9	StretchedExp	$y = y_0 + A e^{-\left(\frac{x}{t_0}\right)^b}$
10	ArrheniusMod	$y = Ax^n e^{-\frac{E}{Rx}}$





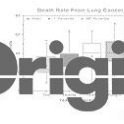
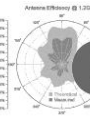
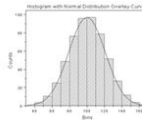
No.	Function Name	Formula
11	Weibull3Pos	$S = \frac{x - x_c}{w_1} + \left(\frac{w_2 - 1}{w_2} \right)^{\frac{1}{w_2}}$ $y = \begin{cases} y_0 & S \leq 0 \\ y_0 + A \left(\frac{w_2 - 1}{w_2} \right)^{\frac{1 - w_2}{w_2}} S^{w_2 - 1} e^{-S^{w_2} + \left(\frac{w_2 - 1}{w_2} \right)} & S > 0 \end{cases}$
12	HLN	$y = A \left(\psi \left(\frac{1}{2} + \frac{b}{x} \right) - \ln \left(\frac{b}{x} \right) \right)$ <p>where ψ is the digamma function.</p>
13	UpperIncGamma	$y = y_0 + c \int_x^{\infty} t^{a-1} e^{-t} dt \quad x \geq 0$
14	HAModel	$y = \frac{1}{1 + \left(\frac{1 + [Ca]/K_c}{1 + [Ca]/K_o} \right)^4 \left[\frac{1 + e^{ZF(x-V_c)/(RT)}}{1 + e^{ZF(x-V_o)/(RT)}} \right]^4 L(0) e^{\frac{-QFx}{RT}}}$
15	<u>LorentzAmp</u>	$y = y_0 + \frac{Aw^2}{4(x - x_c)^2 + w^2}$





No.	Function Name	Formula
16	DSConv	$f(x) = y_0 + (f_1 * f_2)(x) = y_0 + \frac{H\sqrt{4\ln 2}}{\sqrt{\pi w_G}} \int_{-\infty}^{\infty} \frac{\cos\left(\frac{\pi a}{2} + (1-a)\tan^{-1}\left(\frac{\tau - x_c}{w_D}\right)\right)}{\sqrt{\left(w_D^2 + (\tau - x_c)^2\right)^{(1-a)}}} e^{-\frac{4\ln 2(x-\tau)^2}{w_G^2}} d\tau$ <p>where $f_1(x) = \frac{H \cos\left(\frac{\pi a}{2} + (1-a)\tan^{-1}\left(\frac{x - x_c}{w_D}\right)\right)}{\sqrt{\left(w_D^2 + (x - x_c)^2\right)^{(1-a)}}$, $f_2(x) = \frac{H\sqrt{4\ln 2}}{\sqrt{\pi w_G}} e^{-\frac{4\ln 2}{w_G^2}x^2}$</p>
17	ExponentialPDF	$y = \begin{cases} y_0 & y < 0 \\ y_0 + \frac{A}{\mu} e^{-\frac{x}{\mu}} & y \geq 0 \end{cases}$
18	PWParabola3	$y = \begin{cases} a_1x^2 + b_1x + c_1 & x < x_1 \\ a_2x^2 + b_2x + c_2 & x_1 \leq x \leq x_2, \\ a_3x^2 + b_3x + c_3 & x > x_2 \end{cases}$ <p>where c_2 and c_3 are derived parameters.</p>
19	SolarCellsLambertW	$I = I_{ph} - \frac{V + IR_s}{R_{sh}} - I_s \left(e^{\frac{V + IR_s}{nV_{th}}} - 1 \right), \text{ where } V_{th} = \frac{kT}{q},$ <p>k is Boltzmann constant and q is the electron charge. It can be expressed using the Lambert W function.</p> $y = \frac{R_{sh}(I_s + I_{ph}) - x}{R_s + R_{sh}} - \frac{nV_{th}}{R_s} \text{LambertW} \left(\frac{R_s R_{sh} I_s}{nV_{th}(R_s + R_{sh})} e^{\frac{R_{sh}(R_s(I_s + I_{ph}) + x)}{nV_{th}(R_s + R_{sh})}} \right)$
20	PoreSizeDist	$f(r) = \frac{1}{r} e^{-\frac{(\ln(r/r_p))^2}{2s_p^2}}$ $y = \frac{\int_0^{\infty} f(r) [1 - (x/r)^2] dr}{\int_0^{\infty} f(r) dr}$





No.	Function Name	Formula
21	ModDiodeLambertW	$I = I_s \left(e^{\frac{V - IR_s}{nV_{th}}} - 1 \right) + \frac{V - IR_s}{R_{sh}} - I_{ph}$, where $V_{th} = \frac{kT}{q}$, k is Boltzmann constant and q is the electron charge. It can be expressed using the Lambert W function. $I = -\frac{R_{sh}(I_s + I_{ph}) - V}{R_s + R_{sh}} + \frac{nV_{th}}{R_s} \text{LambertW} \left(\frac{R_s R_{sh} I_s}{nV_{th}(R_s + R_{sh})} e^{\frac{R_{sh}(R_s(I_s + I_{ph}) + V)}{nV_{th}(R_s + R_{sh})}} \right)$

