

Double-Weibull model equation is:

$$\log_{10}(N_t) = \log_{10}(N_0) - \log_{10}(1 + 10^\alpha) + \log_{10}(10^A + 10^B)$$

where

$$A = -(t/\delta 1)^p + \alpha$$

$$B = -(t/\delta 2)^p$$

t is time, \log_{10} is base 10 logarithm. The parameters to estimate are $\log_{10}(N_0)$, α , p , $\delta 1$ and $\delta 2$.

The noisy output is defined as:

$$\log_{10}(N_t) = \mathcal{N}(\log_{10}(N_t), \%noise)$$

i.e random number from the normal distribution with mean parameter $\log_{10}(N_t)$ and standard deviation parameter $\%noise$.

Example of Double-Weibull curve

Time unit is hour. Maximal time is 24h. $\log_{10}(N_0) = 5.45$, $\alpha = 3.15$, $p = 3.67$, $\delta 1 = 5.45$ and $\delta 2 = 17.21$

