

Residuals

In the context of least squares (or any other wfitting method, e.g. MLE) the residuals are the difference between a model function and the experimental data. In least squares usually the weighted residuals trace is shown:

 $R_{wgt}(t_i) = {D\left(\frac{model parameters}{t_i}\right) - D_i^{exp}}$

 $(D_i^{exp} | t_i)$ is the i-th data point of an experimental data set, $D|\left(\frac{1}{t_i}\right)$ is the model equation at the observed points t^{j_i} .

The weighting factor $w^{\{}_i$ describes the experimental uncertainty of each individual data point. For TCSPC data $w^{\{}_i$ is defined as

 $sw_i=\sqrt{D_i^{exp}}$

The resudials trace is of importance within any framework concerned with fitting, as the SymPhoTime software or FluoFit.

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PicoQuant GmbH Rudower Chaussee 29 (IGZ) 12489 Berlin Germany P +49-(0)30-1208820-89 F +49-(0)30-1208820-90 info@picoquant.com www.picoquant.com