Fast lifetime

A method for estimating the average lifetime, calculated non-distinctive on different exponentials in a simple single path calculation, compared to a complete fitting operation against a more complex, non-linear model. Often used with FLIM go get a first idea of the lifetime distribution in the image.

In detail, FastLT is calculating the barycentre of the (pseudo–)pixel's decay. The time span from the barycentre of the IRF to the barycentre of the decay equals the average lifetime. This estimate is very fast and does not suffer as much from low statistics. If an IRF is not available, the “time zero” t_θ has to be estimated differently, for example by using the rising flank of the decay or the entrance of the FWHM interval. However, this may introduce a systematic shift in the estimated average lifetimes.

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