General fluorescence

The goal the tutorials is to provide introductory information for the analysis and interpretation of fluorescence data acquired by time-tagged time resolved (TTTR) data. The analysis of TTTR-data includes:

- Fluorescence decay analysis
- Fluorescence correlation spectroscopy
- Single molecule detection

The software ChiSurf implements the methods for data analysis and interpretation presented by the tutorials. ChiSurf is written in Python and developed on GitHub. On Linux and macOS it installs through conda; on Windows a compiled installer is available. Builds, earlier releases and the user manual are in the download directory.

Fluorescence decay analysis

- Global analysis of multiple fluorescence decays
- Generation of fluorescence decay histograms based on TTTR data
- Analysis of time-resolved anisotropy decays
- Analysis of FRET quenched fluorescence decays by physical model functions [1]

Fluorescence correlation spectroscopy

- Analysis of FCS curves
- Correlation of TTTR-data by efficient correlation algorithms [2]

Tutorial pages

- Theoretical background — how time-resolved fluorescence is measured by time-correlated single photon counting
- Representing decays — four ways of displaying a fluorescence decay, and what each one tells you