Software

Commercial

Microscopy

SymPhoTime64
A complete software suite for acquisition and analysis of time resolved fluorescence data. SymPhoTime features a powerful scripting language that allows customisation of existing analysis and even implementation of novel analysis techniques.

Phasor Analysis Phasor Analysis is currently not included in SymPhoTime64. However, you can use Globals developed by the Laboratory for Fluorescence Dynamics to analyse FLIM data via the Phasor approach.

Spectroscopy

EasyTau
EasyTau is the systems software of PicoQuants time resolved spectrometer FluoTime 300. EasyTau features a scripting language to automate more complex experiments. Examples of EasyTau scripts can be found on github: https://github.com/PicoQuant/EasyTau-Scripts

FluoFit
Decay curve analysis software

Open Source

Please note that these are external projects for which PicoQuant takes no responsibility and provides no support. In case of problems please contact the respective authors. Also note that such projects may not be maintained continuously. In particular, please check if they use current versions of file formats and/or programming libraries before you invest in larger development work based on such projects.

If you develop improved or new code, please consider contributing your code back to the community.

The compilation below is probably not complete. If you are the maintainer of a software that deals with TCSPC data please edit this page and add your software listing. Alternatively you can also use https://support.picoquant.com to contact PicoQuant support to submit your software project.

Data Analysis

- Demo Code for reading PicoQuants PTU File format
- A Python library to read PTU files
  From the authors: “The main purpose of the library is to compute g^2 from the photon arrival times as fast as possible, as our files often go into multi GB sizes. With a good SSD we can parse >3GB/s. It can also

compute intensity time traces and post select photons based on that."

- ptuT3toT2 - a program that converts ptu files from picoquant from T3 mode to T2 mode
- Extensible Time-tag Analyzer
- exciton diffusion (Matlab)
- Reading PicoQuants PTU File formats to MatLab - 100x faster than the Demo Code
- Researchgate group Open Computational Tools for Single-Molecule Spectroscopy
- PAM is a software package for quantitative analysis of fluorescence microscopy and spectroscopy data, with a focus on experiments using pulsed interleaved excitation.http://www.cup.uni-muenchen.de/pc/lamb/software/pam.html
- ImageJ Import Filter for pt3 files: http://imagejdocu.tudor.lu/doku.php?id=plugin:inputoutput:picoquant_.pt3_image_reader:start
- ImageJ import of ptu/pt3 image files (+intensity/average lifetime stacks): https://github.com/ekatrukha/PTU_Reader
- **DecayFit - Fluorescence Decay Analysis** http://www.fluortools.com/software/decayfit
- **AniFit - Anisotropy Decay Analysis** http://www.fluortools.com/software/anifit
- PyCorrFit
- PyCorrelate
- QuickFit 3.0: http://www.dkfz.de/Macromol/quickfit/
- FCS viewer
- FCS Bulk Correlation Software accepting pt3 and ptu files
  FCS Point Correlator
- FLIMFit
- **Photon-Tools** Python utilities for working with photon timestamp data from fluorescence spectroscopy experiments https://github.com/bgamari/photon-tools
- **Photon Correlation** A suite of command-line tools for performing calculations on photon arrival data, as produced by hardware such as the PicoQuant PicoHarp and HydraHarp: https://github.com/tsbischof/photon_correlation
- **libpicoquant:** Tools for reading PicoQuant file formats: https://github.com/tsbischof/libpicoquant
- **Open Microscopy's BioFormat** supports PicoQuant bin files (pre-histogrammed Image Data File) https://www.openmicroscopy.org/site/support/bio-formats5/formats/picoquant-bin.html
- **dspFRET**: Matlab code for analyzing TTTR data from PicoQuant. Typical application is analysis of single pair FRET measurements with pulsed interleaved excitation (PIE-FRET). https://github.com/RobinsonLab/dspFRET
- **FRETBursts**: software for burst analysis of freely-diffusing single-molecule FRET (smFRET) measurements including µs-ALEX. FRETBursts Homepage and paper. Have a look also at the **PyBroMo** simulator for single molecule FRET experiments of freely diffusing particles.
- **FoCuS-point**: FoCuS-point utilises advanced time-correlated single-photon counting (TCSPC) correlation algorithms along with time-gated filtering and innovative data visualisation. FoCuS Homepage and paper
- TCSPC curve fitting for phd files (Python)

Data Acquisition

- qudi: A modular laboratory experiment management suite which supports PicoHarp300.
  https://github.com/Ulm-IQO/qudi

Controlling PicoQuant Devices

Sepia II and Solea

- https://github.com/PicoQuant/PQLaserDrv

TimeHarp 260

- https://github.com/PicoQuant/TH260-Demos

PicoHarp 300

- PicoHarp 300 TCSPC system hardware plug-in for ScopeFoundry (Python)
- Python binding, Tango device server and Taurus gui to access the PicoHarp300 photon counter
- https://github.com/PicoQuant/PH300-v2.x-Demos
- https://github.com/PicoQuant/PH300-v3.x-Demos

HydraHarp 400

- Control HydraHarp400 (python)
- https://github.com/PicoQuant/HH400-v1.x-Demos
- https://github.com/PicoQuant/HH400-v3.x-Demos

Other

- **pyPL** wxpython integration of software and hardware for micro-photoluminescence measurements: WinSpec, PicoHarp, and Thorlabs/APT piezos and stepper motors.
  https://github.com/kaseyrussell/pyPL
- PicoHarp Library in Python
  https://github.com/srgblnch/PicoHarp300

GitHub repositories mentioning PicoQuant and supporting the PicoQuant t3r data file format:
https://github.com/search?&q=picoquant+OR+picoharp+OR+hydraharp+OR+TimeHarp

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