

# CarpetView

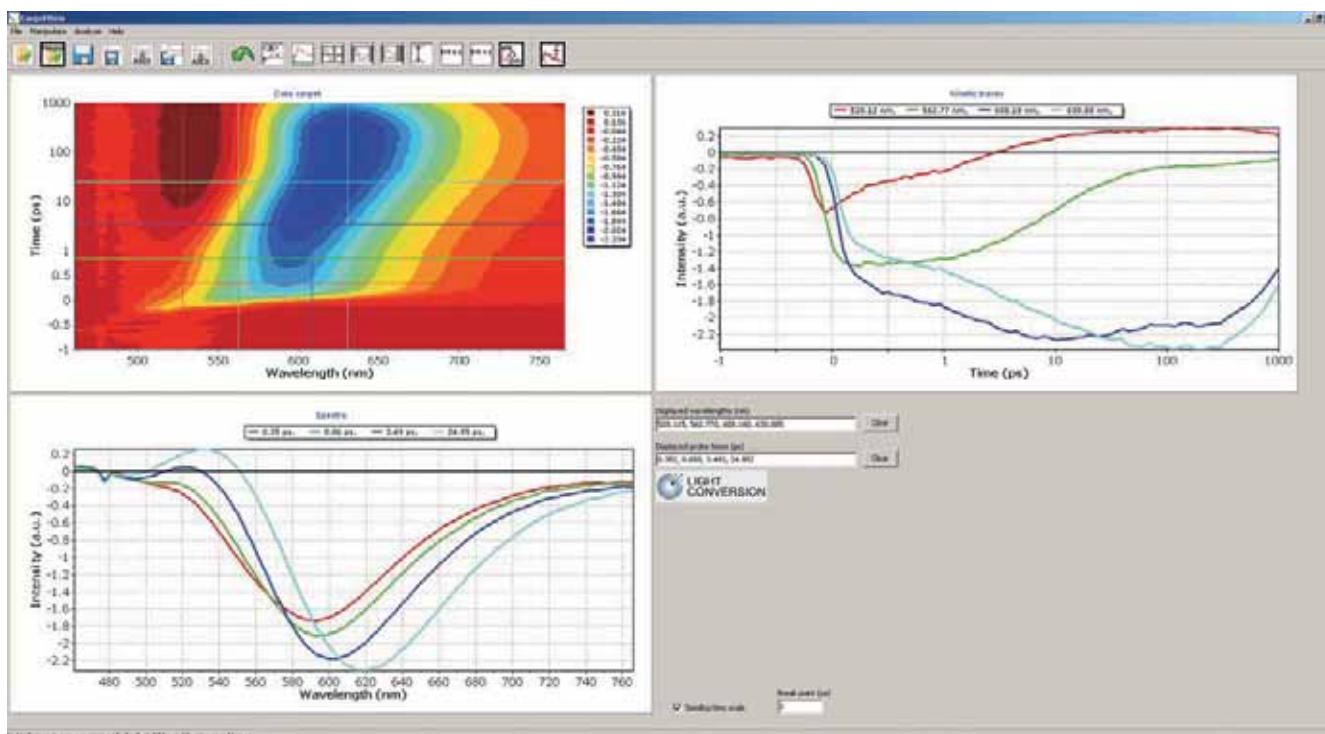
CarpetView is a software package dedicated for inspection, visualization and analysis of ultrafast spectroscopy data.

The program comes in two guises:

- **Classical**, intended to be used with pump-probe and time-resolved fluorescence datasets,
- **3D**, designed to be used with 2D electronic spectroscopy (2DES), and Fluorescence lifetime imaging (FLIM) datasets.

Visualization functions include:

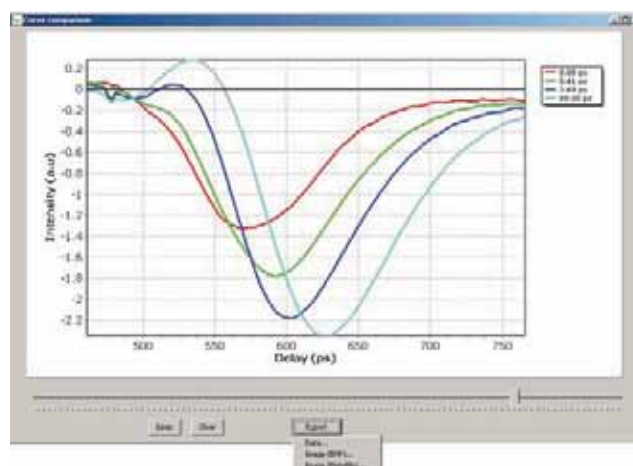
- Overview of your spectro-temporal transient absorption or fluorescence data as contour plot.
- Click-based selection of temporal and spectral slices.
- Comparison of several time-gated spectra or kinetic traces in a single graph.
- Export of produced graphs in bitmap or metafile formats.
- Export of the data of selected graphs in ASCII format.
- Linear and semi-logarithmic time axis in kinetic traces to aid visualizing spectral changes extending over many orders of magnitude in time.



Main window of *Classical* CarpetView displaying a pump-probe dataset

Besides viewing your data you can perform the trivial data manipulations, such as:

- Correct for the chirp in the probe light.
- Merge two datasets measured at different spectral windows.
- Limitation or removal of contaminated spectral or temporal region.
- Pre-time zero signal subtraction.
- Calibration of the spectrum using a reference absorption spectrum measured on your setup.
- Shift or rescale probe times.
- Change wavelength scales between wavenumbers, electron-volts and nanometers.
- Smooth spectra or traces to combat noise.



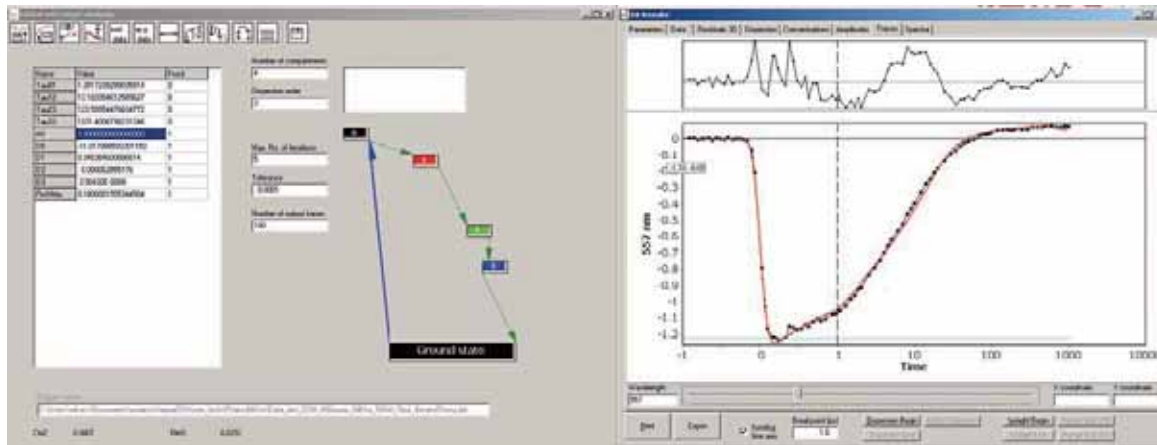
Spectra viewer window of CarpetView

### GLOBAL AND TARGET ANALYSIS OF ULTRAFAST DATA

A powerful analysis tool provides the fitting functionality for your spectro-temporal data. The data is analyzed using user-defined compartmental models, where different compartments are interconnected using sets of linear differential equations. The fitting procedure also allows including the chirp of the probe light in the data performs deconvolution with a Gaussian instrument response function.

- Graphical construction of the model.
- Point-and-click based estimation of initial parameters of the dispersion curve.

- Advanced point weighting functions for physically sensible fitting.
- Comprehensive overview of the fitting results, including compartment populations, compartment-attributed spectra, fitting curves superimposed on the data and residuals.
- Report generation.
- Export of fitting data in ASCII format.
- Export of fitting graphs in metafile and bitmap formats.

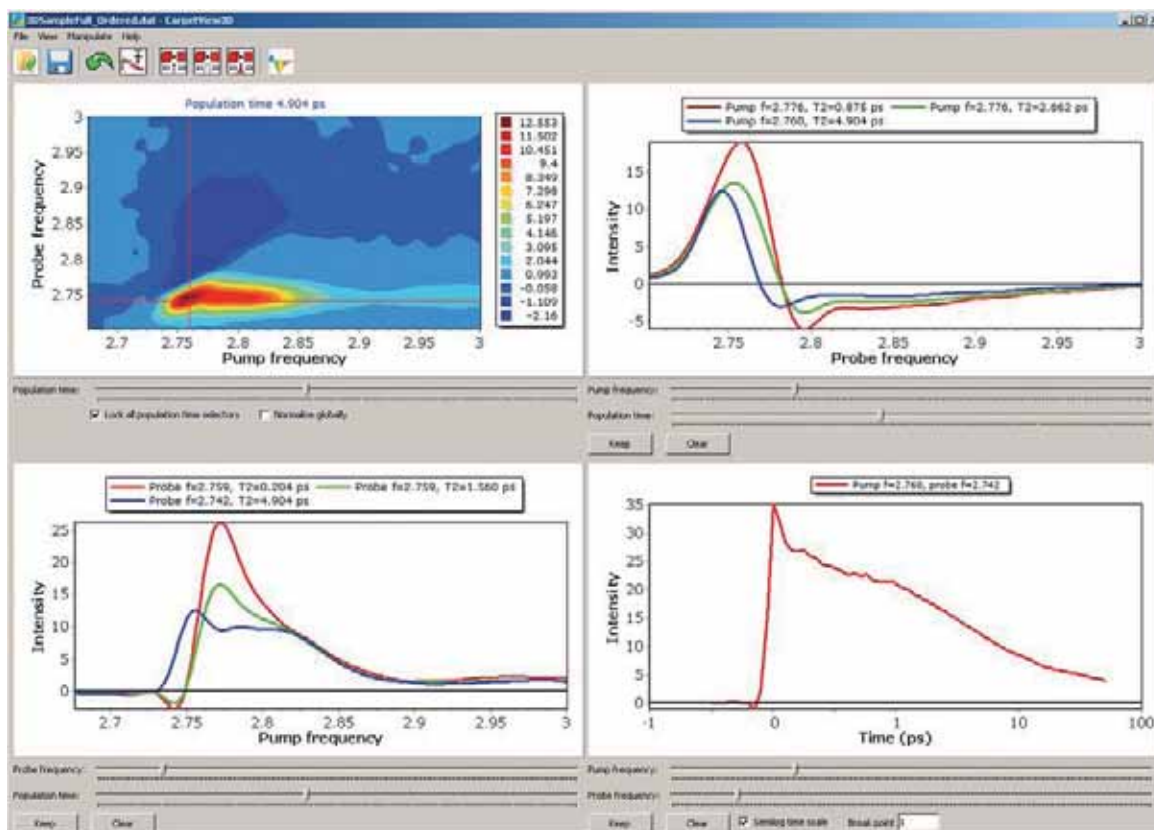


Global and target analysis window of CarpetView

### 3D VERSION OF CARPETVIEW:

- Includes all the functionality of *Classical* version.
- Allows to visualize, inspect and manipulate data *cubes* obtained in 2DES or FLIM experiments.
- Performs global and target analysis either on the entire data cube, or its two-dimensional cuts.

- Performs trivial data manipulations:
  - Binning
  - Axis rescaling
  - Extraction of two-dimensional datasets from data cubes.



Main window of CarpetView-3D displaying a two-dimensional spectroscopy dataset

SPECTRO METERS