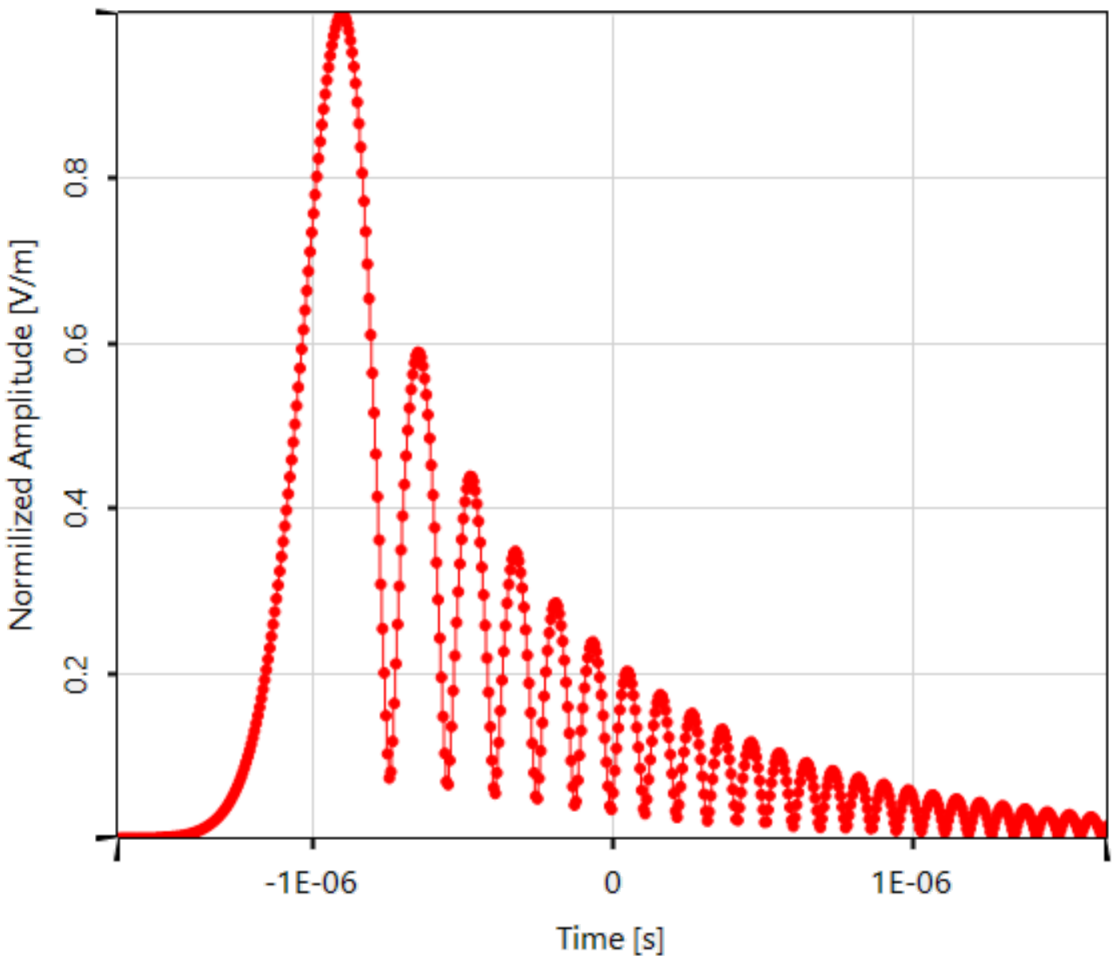
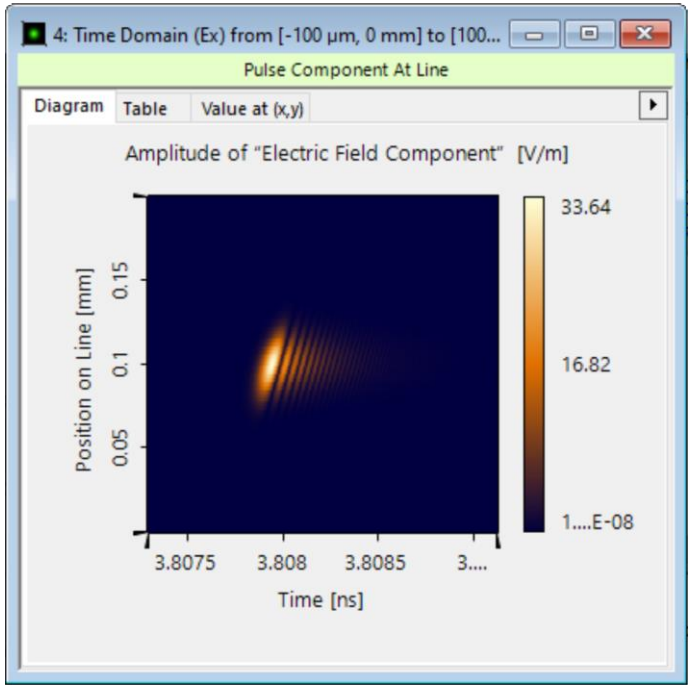
How to Format VirtualLab Fusion Results

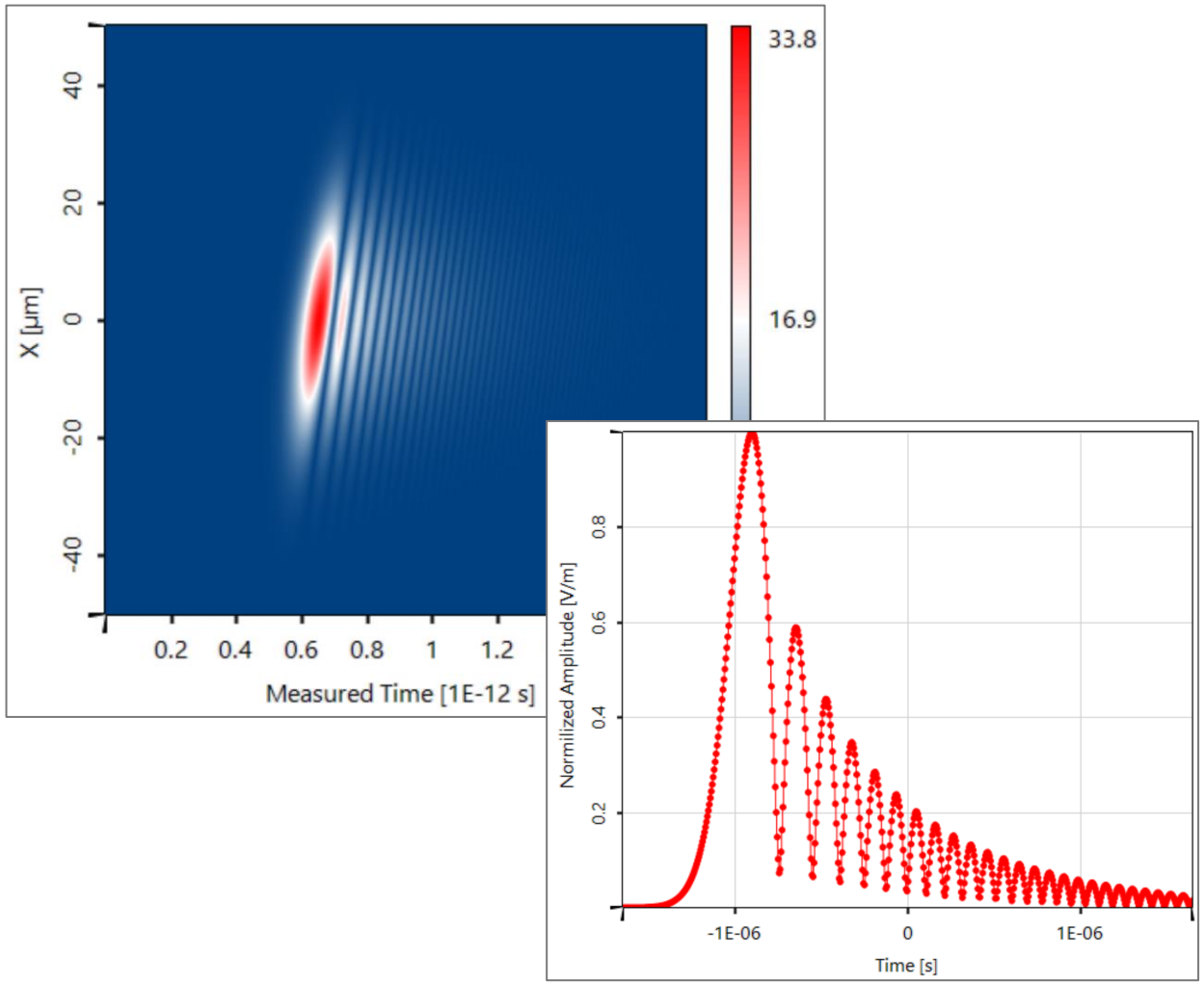
Abstract



While providing handy tools to obtain fast and accurate results for a desired optical task is the main purpose of any optical simulation software, the value of a versatile post processing should not be underestimated. The adaption of the appearance of the resulting data enables to either fit specific requirements for a publication in a journal or reports, but moreover to emphasize and highlight interesting aspects of the results. In this Use Case different options for the customization of detector results in VirtualLab Fusion are demonstrated. These tools can be utilized for usual 2D field representations, but also for 1D cross-sectional data and multi-graphs.

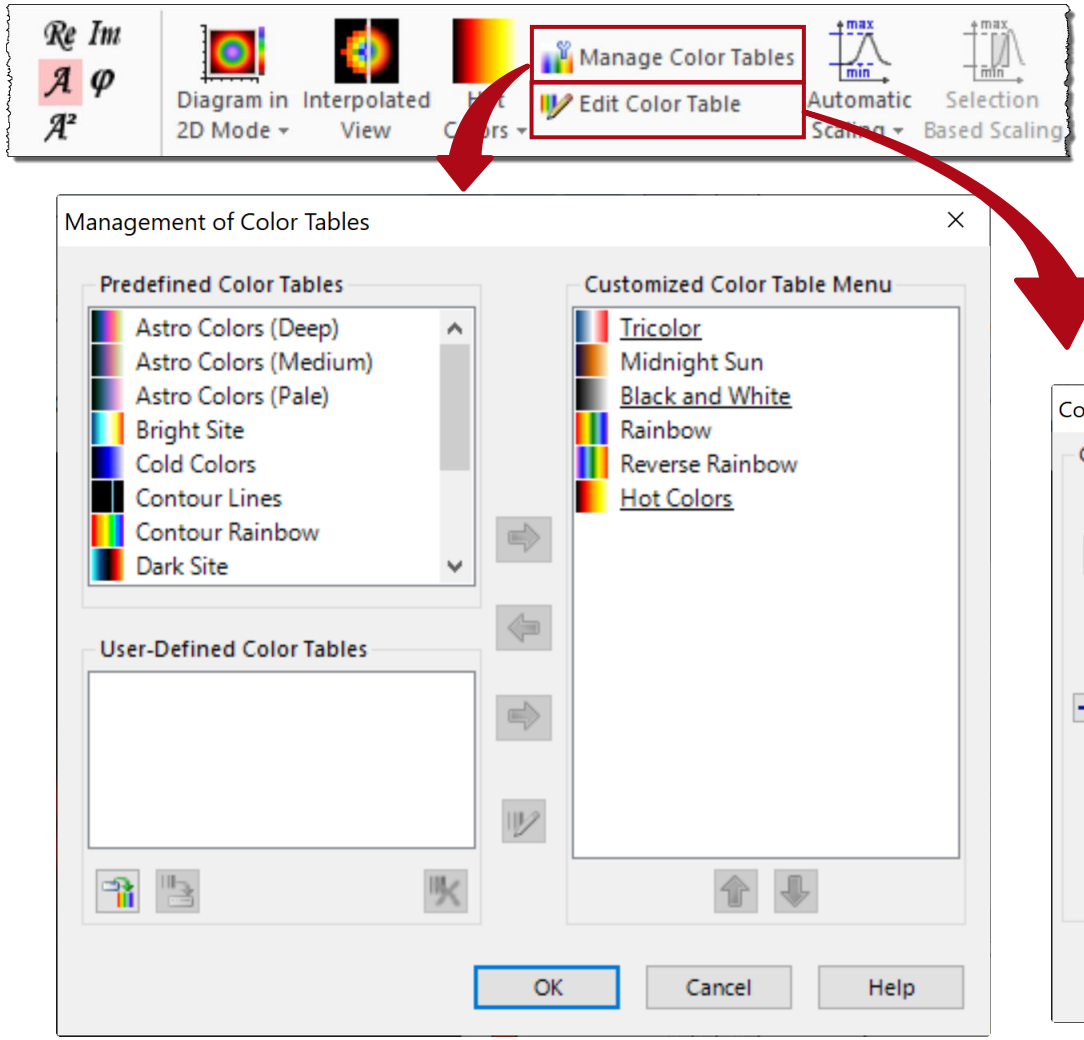
This Use Case Shows ….



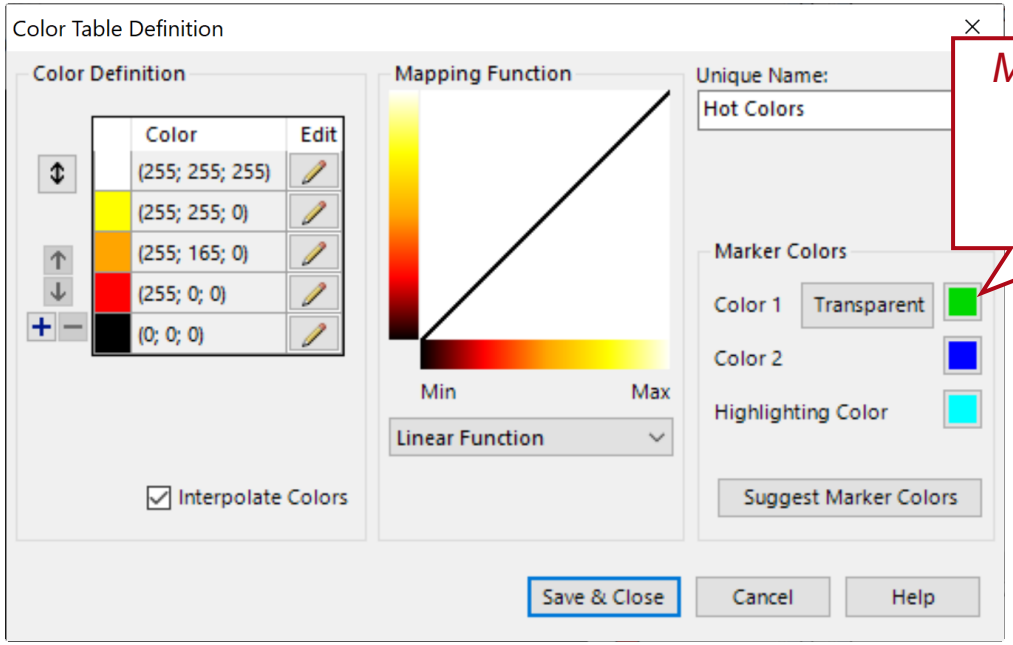


How to customize 1D and 2D figures in VirtualLab Fusion.

Color Schemes

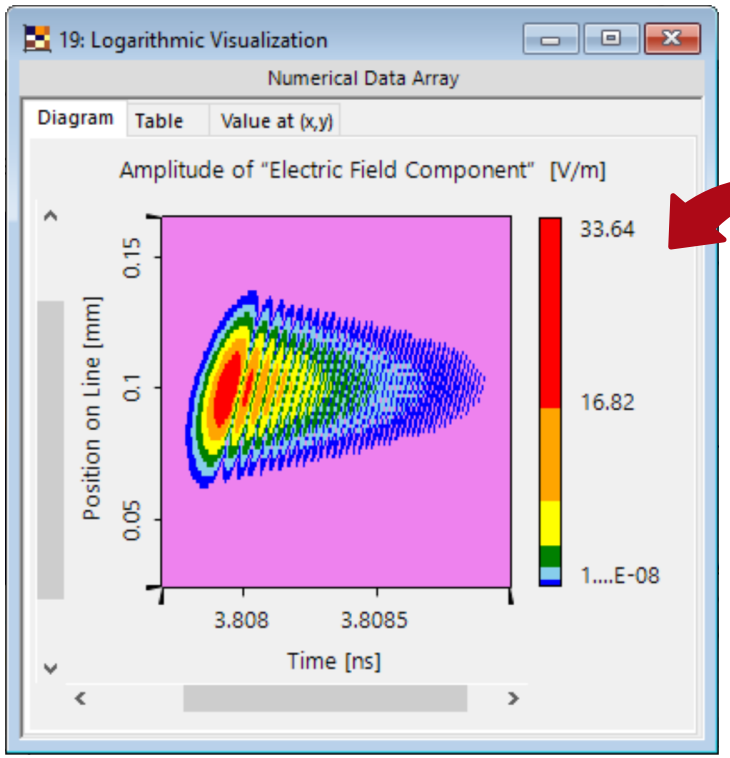


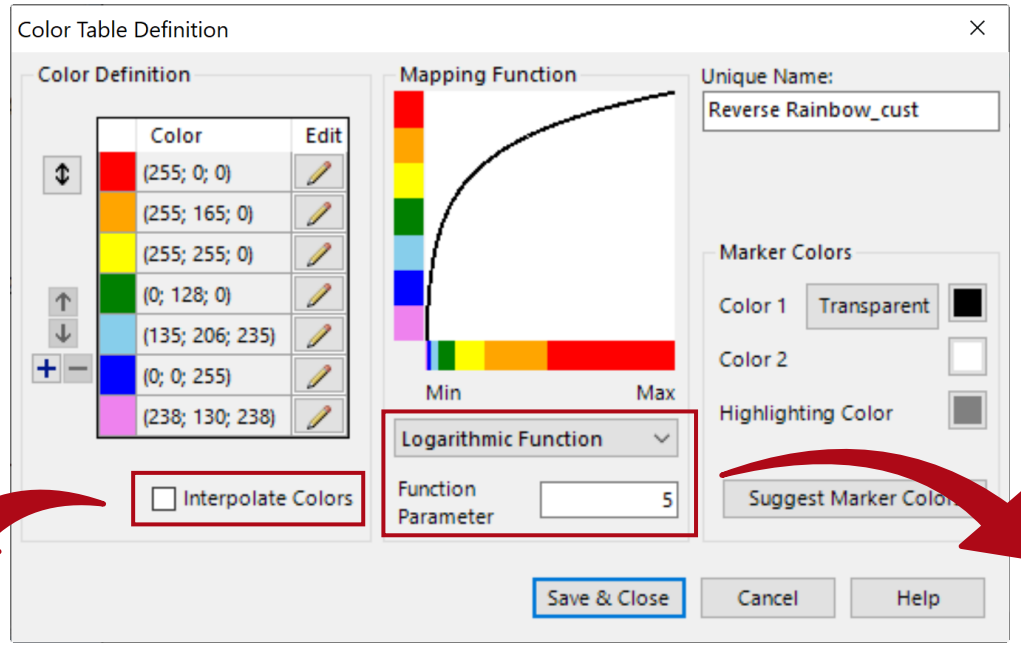
In the tab *Manipulations* of the menu ribbon, the user can choose from a selection of different color schemes for the depiction of 2D data. It is also possible to adapt the existing schemes or to define a customized ones.

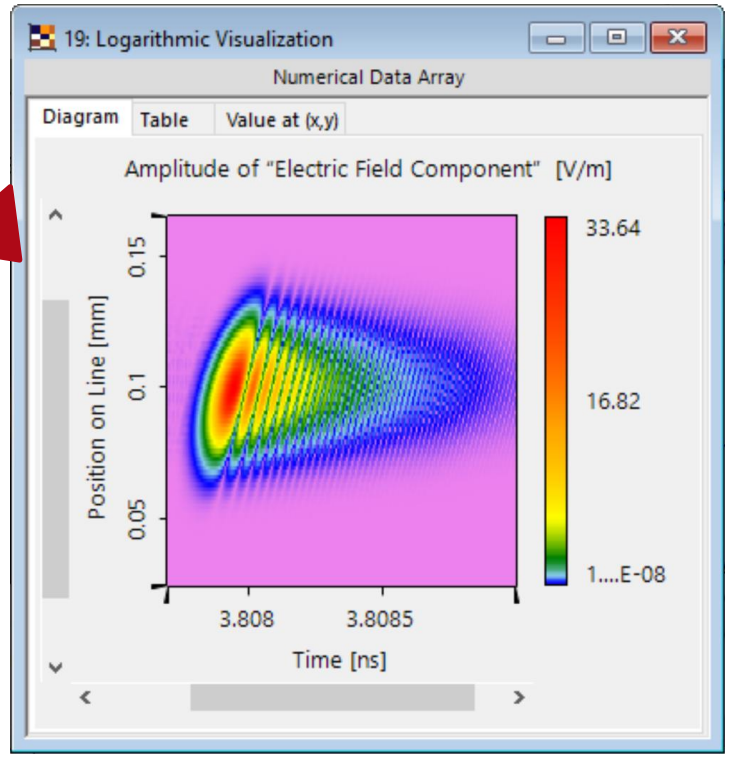


Marker Colors can also be defined per color table.

Logarithmic & Exponential Color Tables

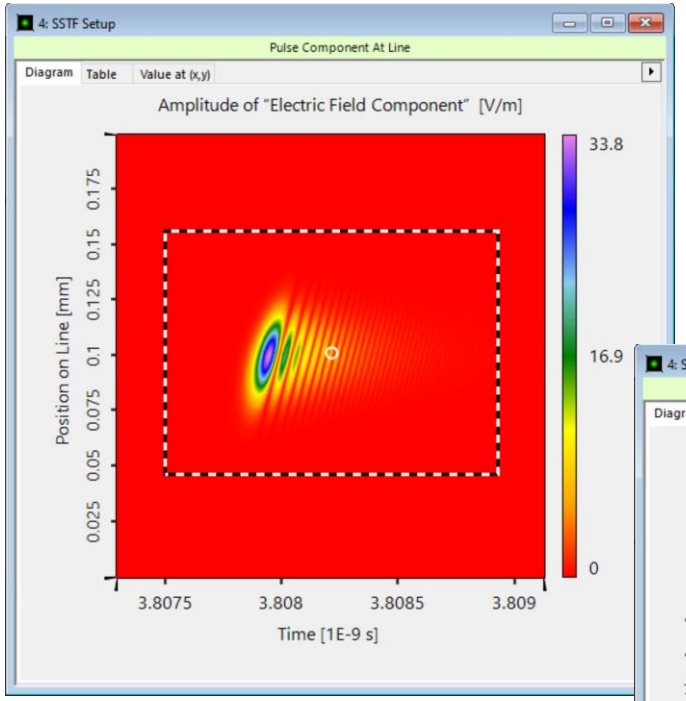






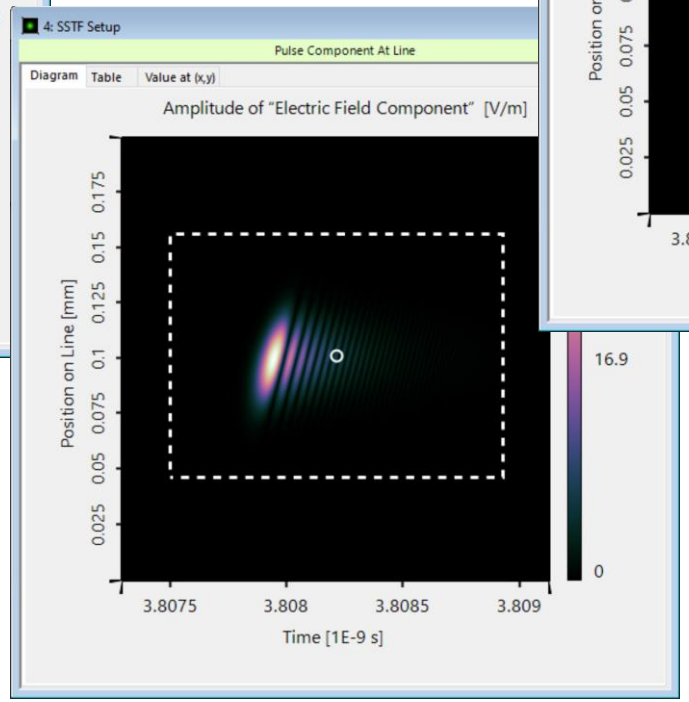
In case, several orders of magnitude are of interest, logarithmic or exponential color schemes come in handy, which can be configured for any *Color Table.* For a better visualization of contours, it is also possible to deactivate the interpolation between the defined colors.

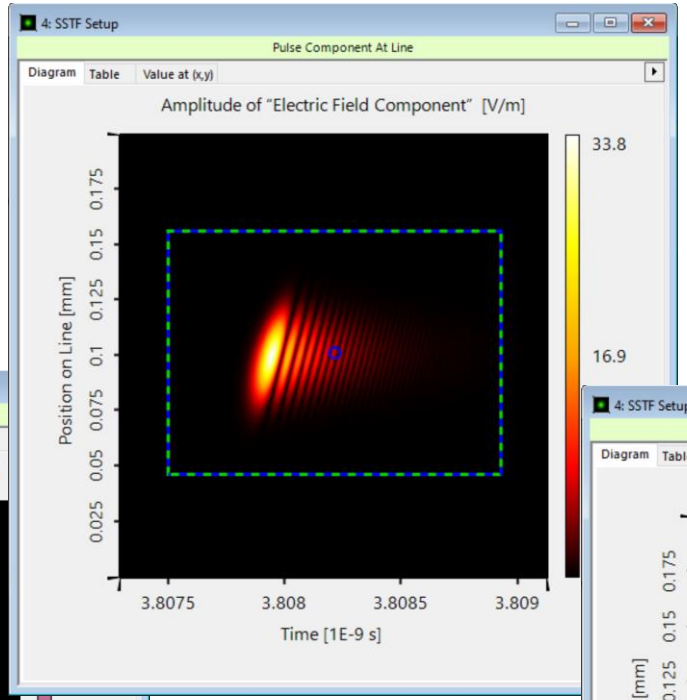
Examples for Color Schemes



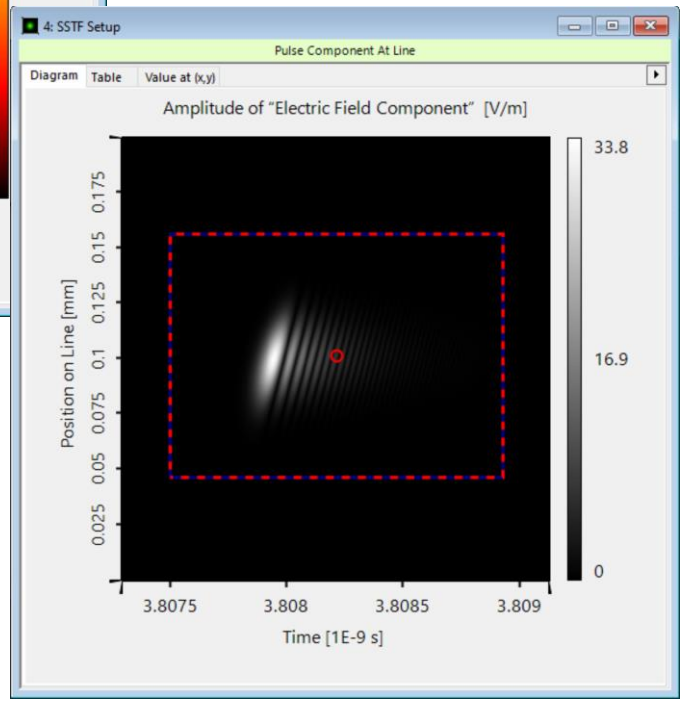
Reverse Rainbow

Astro Colors



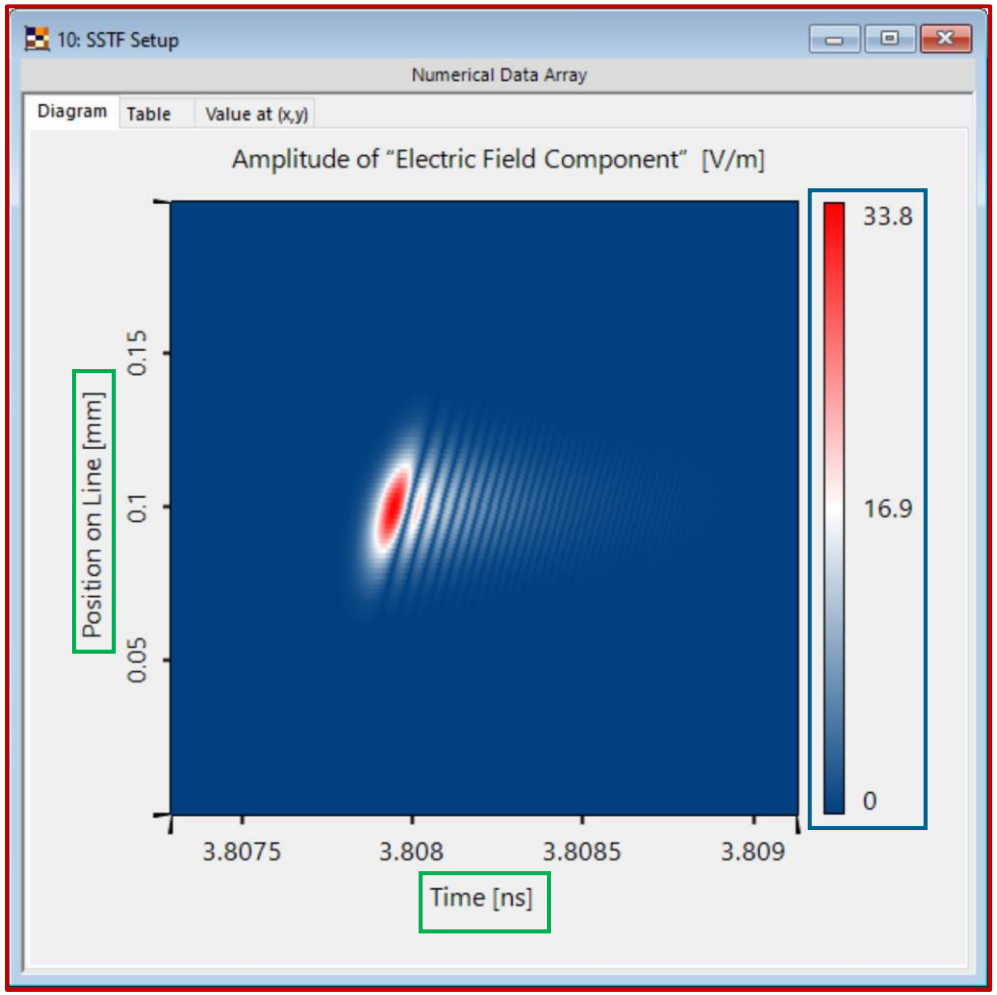


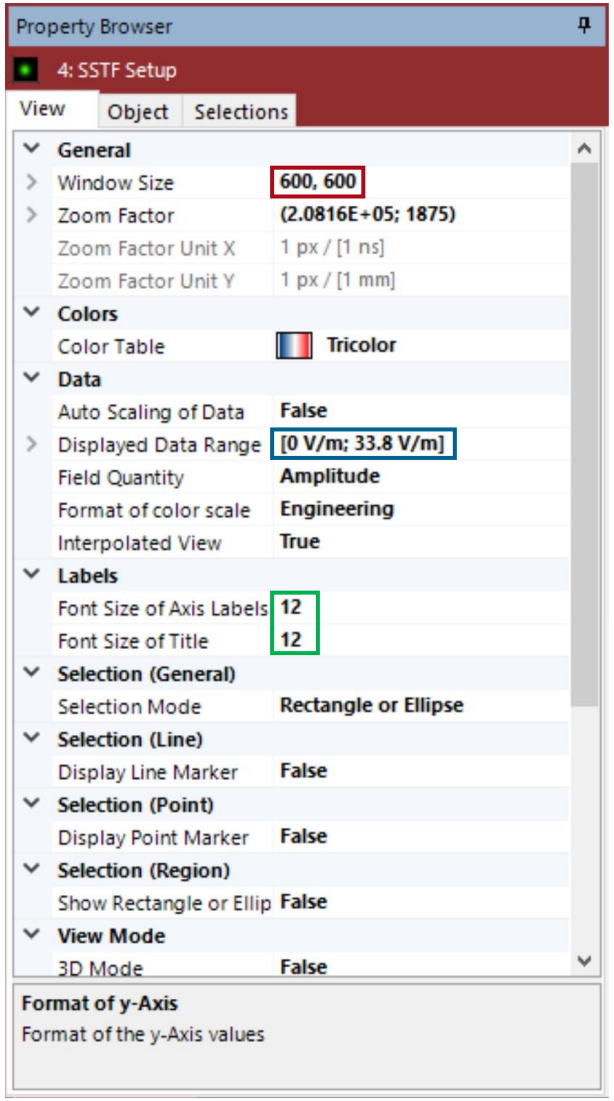
Hot Colors



Black & White

Scaling and Axis Configuration

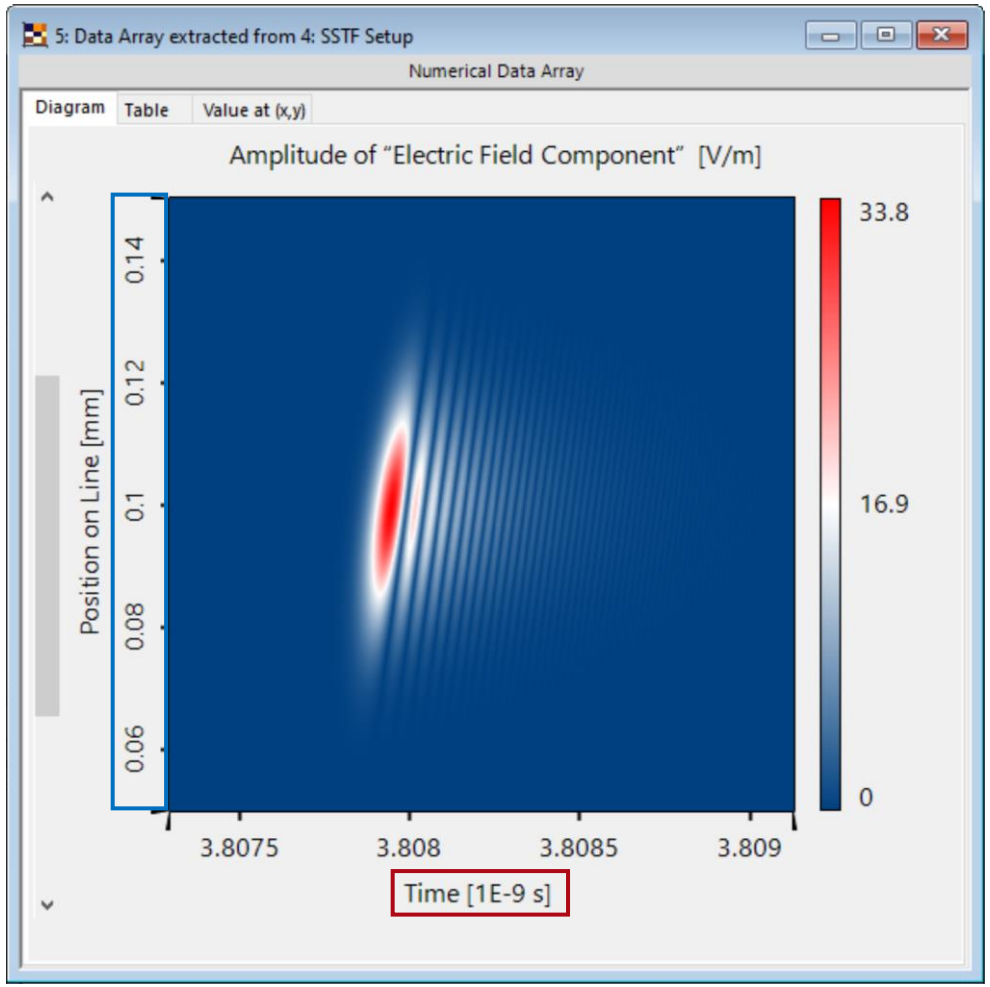


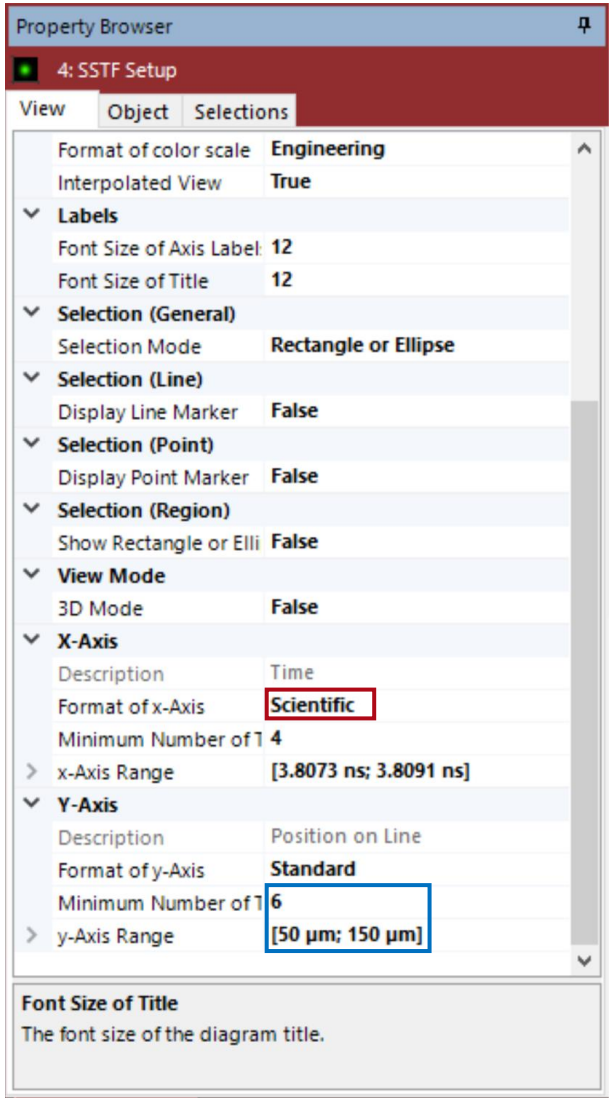


In the *Property Browser* the user can configure various parameter like the size of the overall window and the used fonts. Moreover, the displayed data range of the color scheme can be adjusted here.

All these parameters can be pre-set in the *Global Options*.

Configuration of Axes

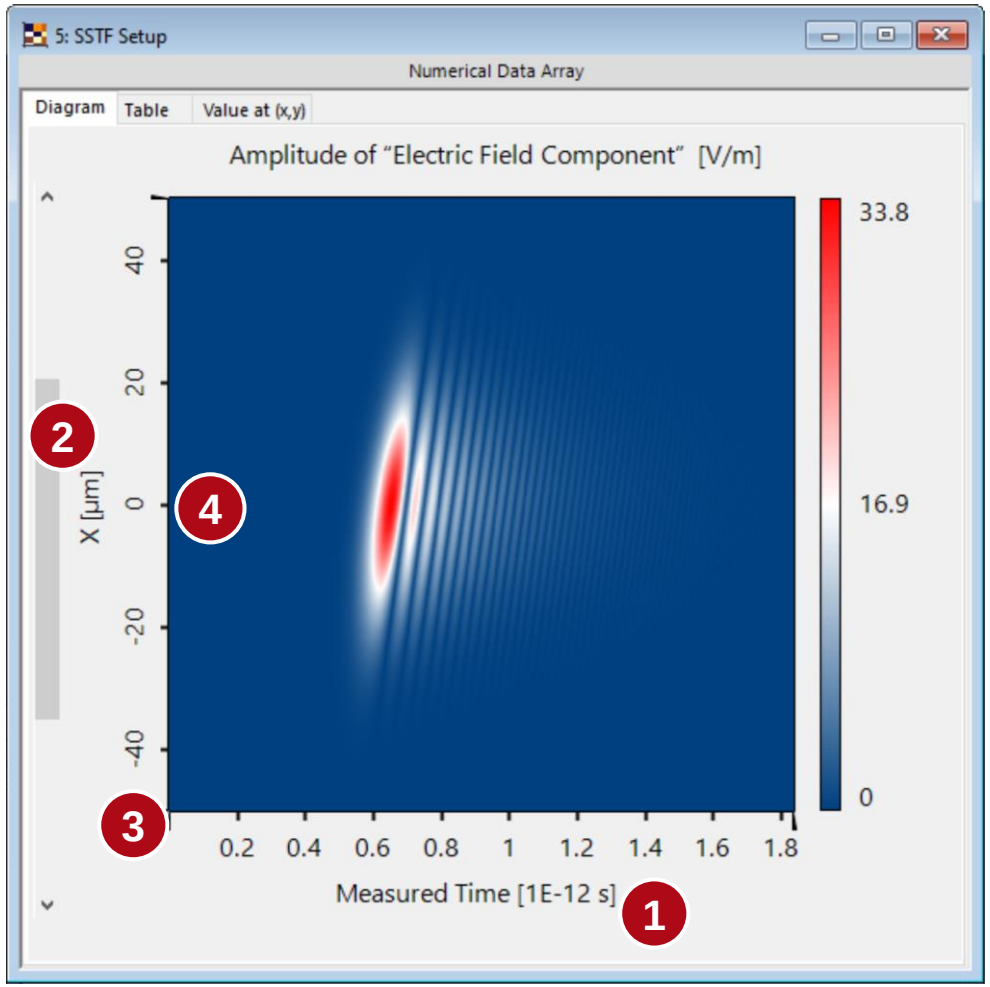


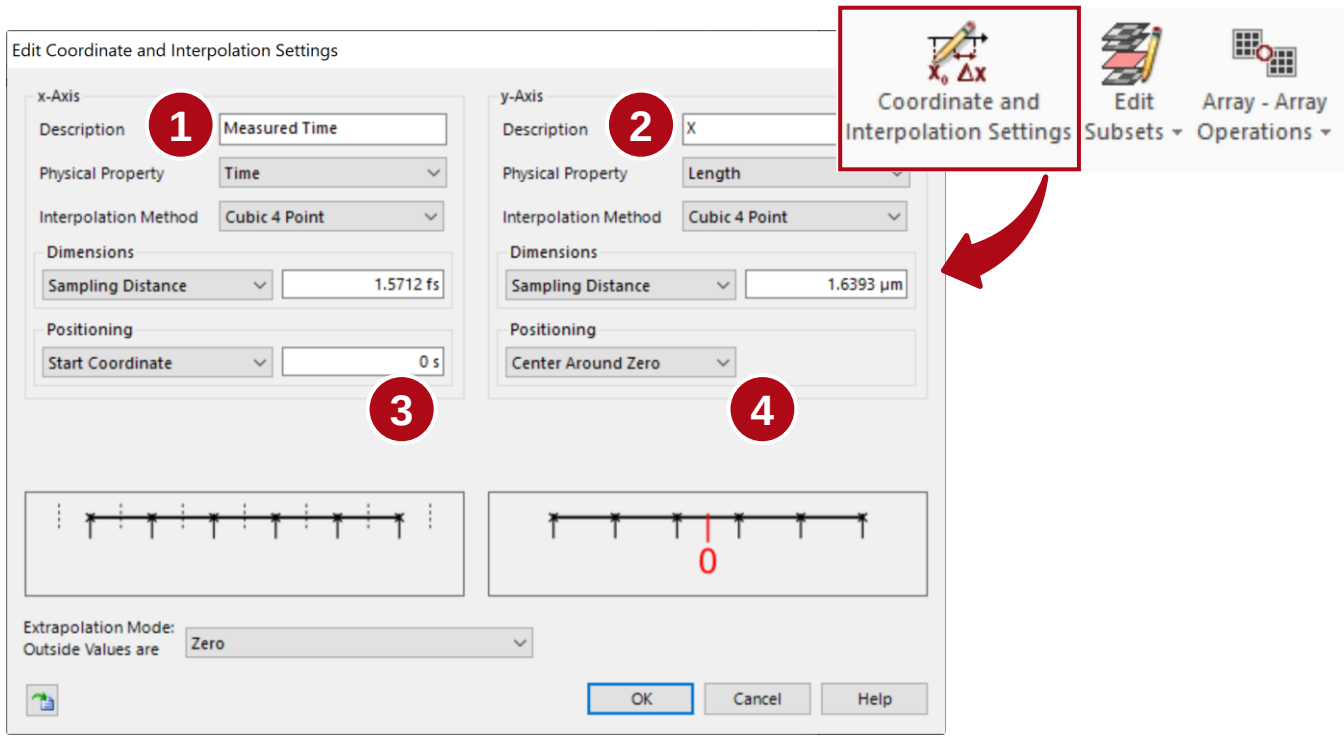


Furthermore, parameters like the format of the axes and the minimum number of displayed ticks can be adapted. For the format of the axes, three different options are available:

- *Standard*: The numbers are shown as usual.
- *Scientific*: Powers of ten are used to make to highlight the magnitude and to reduce the number shown zeros.
- *Engineering*: SI prefixes are used to reduce the displayed zeros.

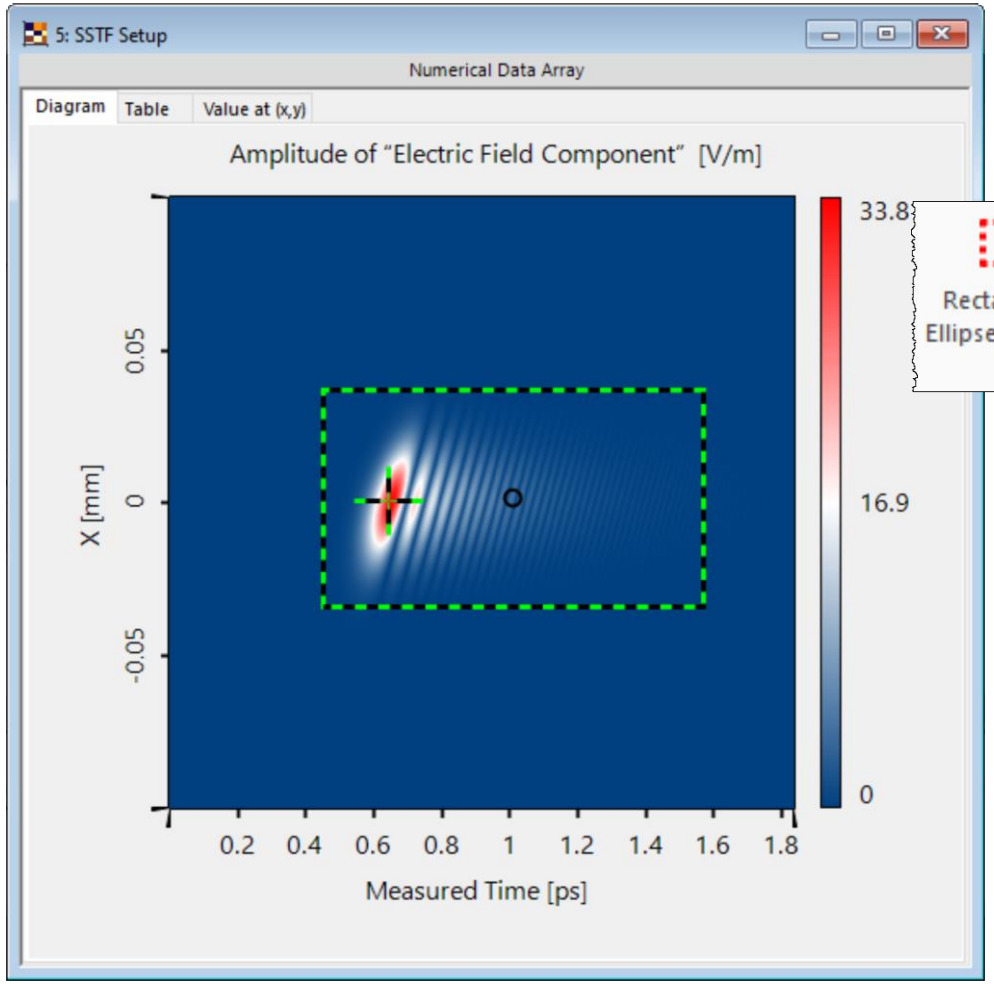
Coordinate and Interpolation Settings



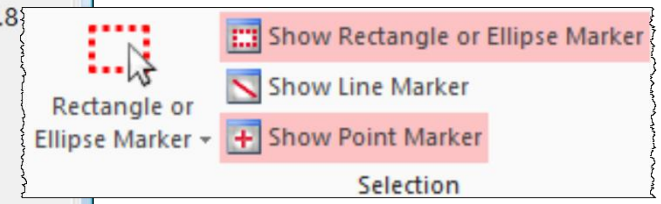


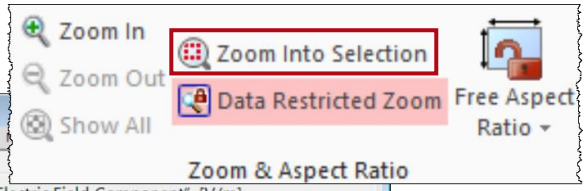
More advanced options for the control of the axes are provided by the *Coordinate and Interpolation Settings,* which can be found in the *Manipulations* menu. Here, the user can rename the axes, change the physical unit and adjust the sampling according to the requirements.

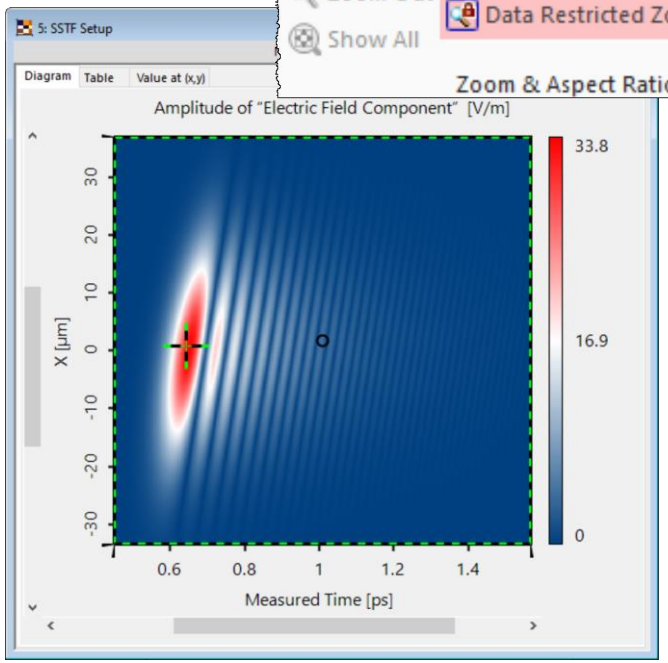
Point and Rectangle Markers



Point, Line and *Rectangle or Ellipse Markers* can be found in the *View* tab to select specific parts of the result data for further investigation.

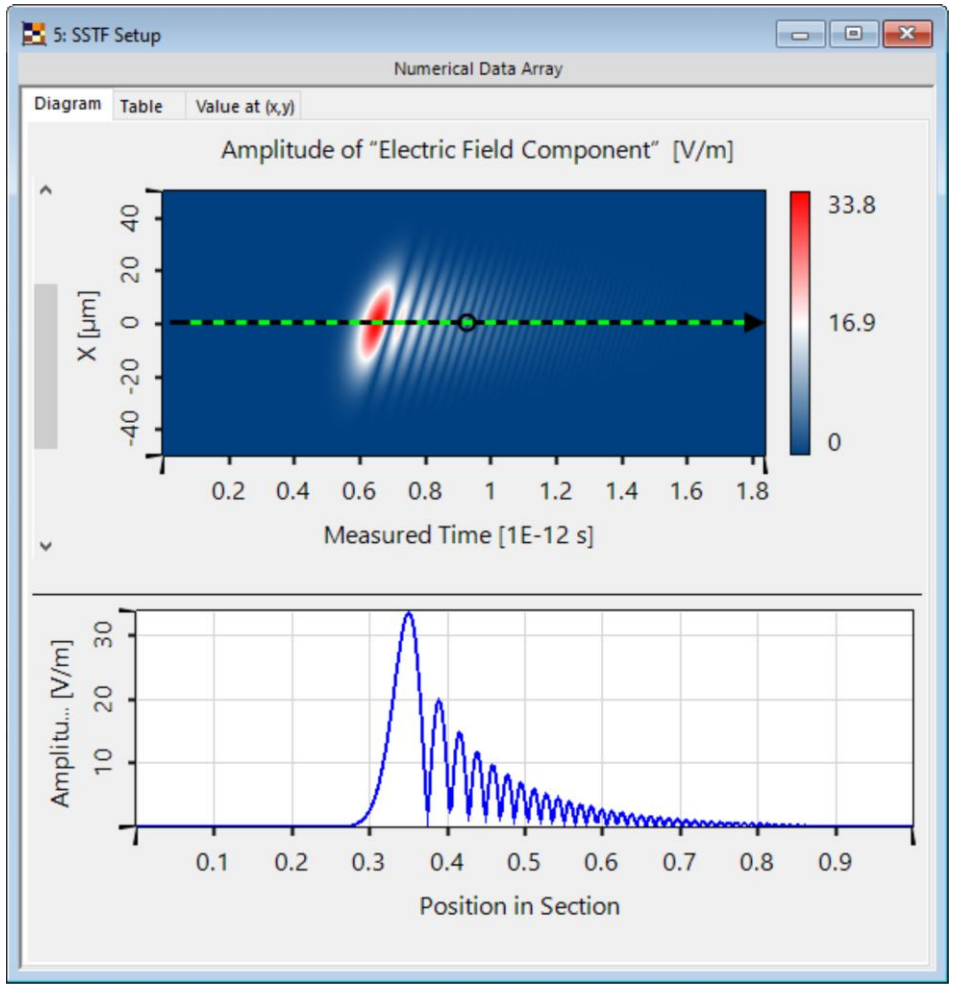


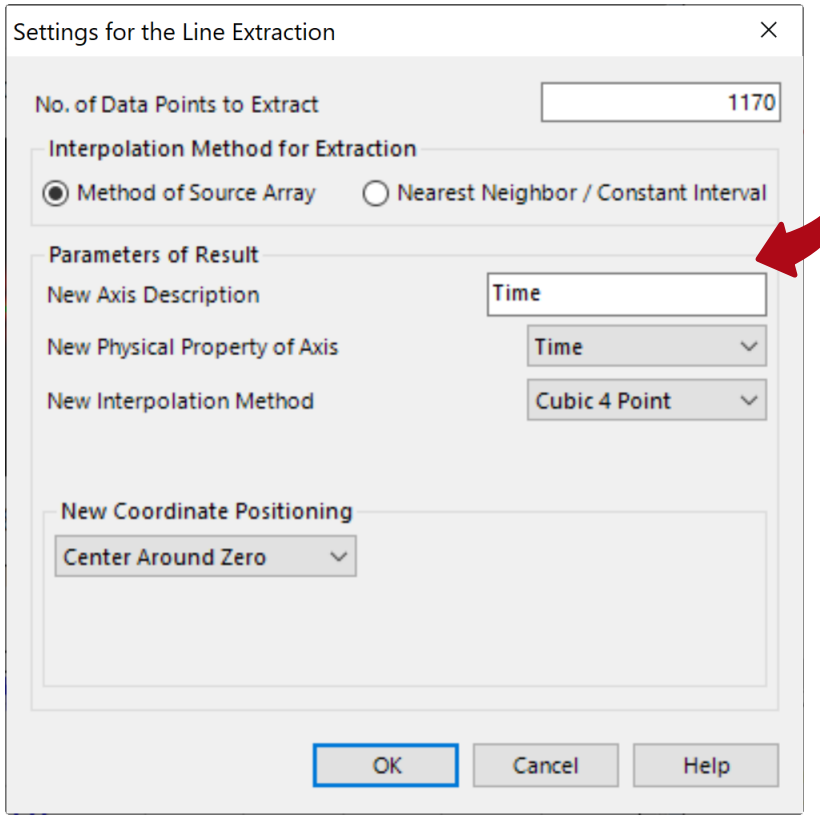


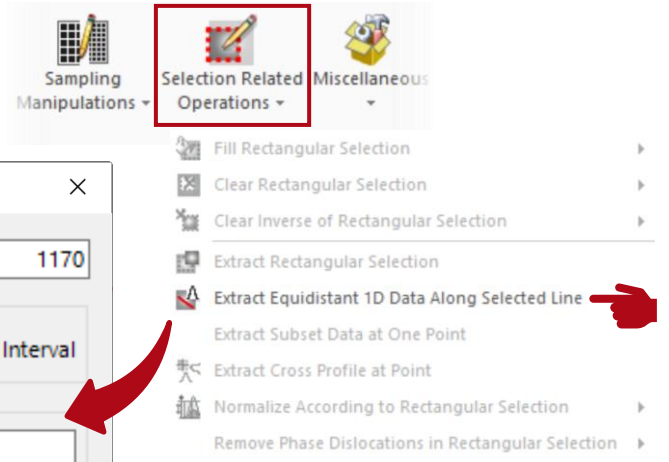


If e.g. a *Rectangle Marker* is applied, new options will appear like the ability to zoom directly into the selected area.

1D Cross-Sectional Selection / Line scan

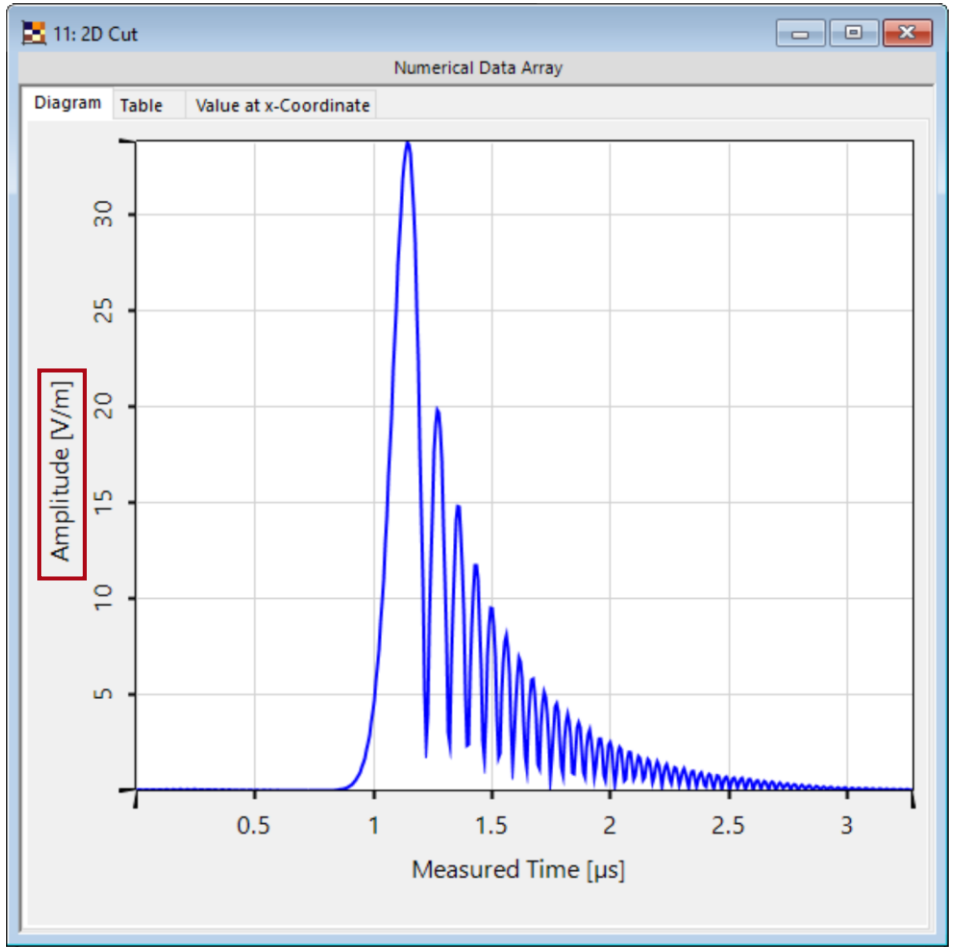


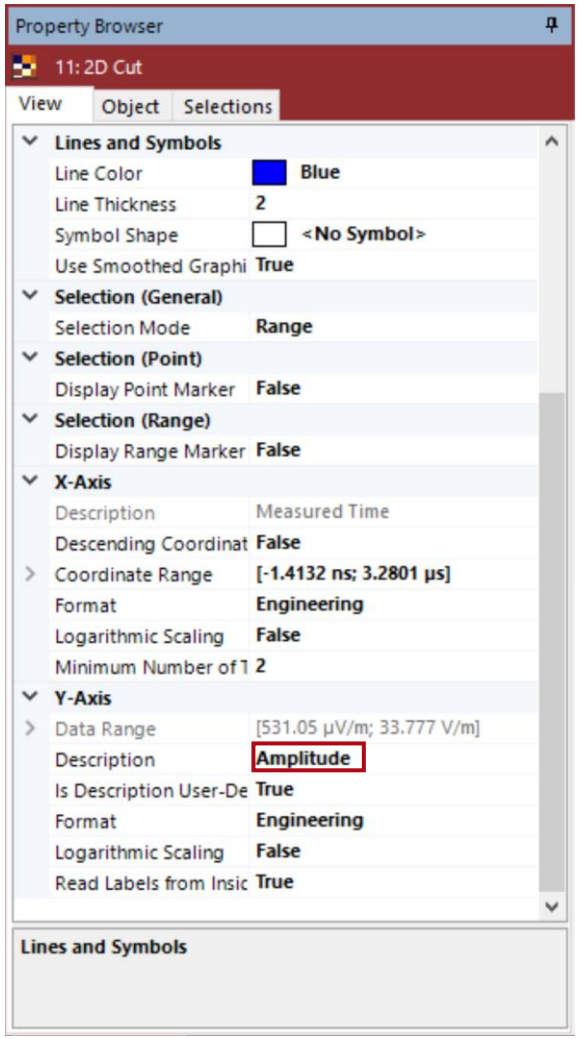




If a *Line Marker* is applied, the corresponding 1D array will displayed right below the initial document. With the option *Extract Equidistant 1D Data Along Selected Line* an individual document can be created.

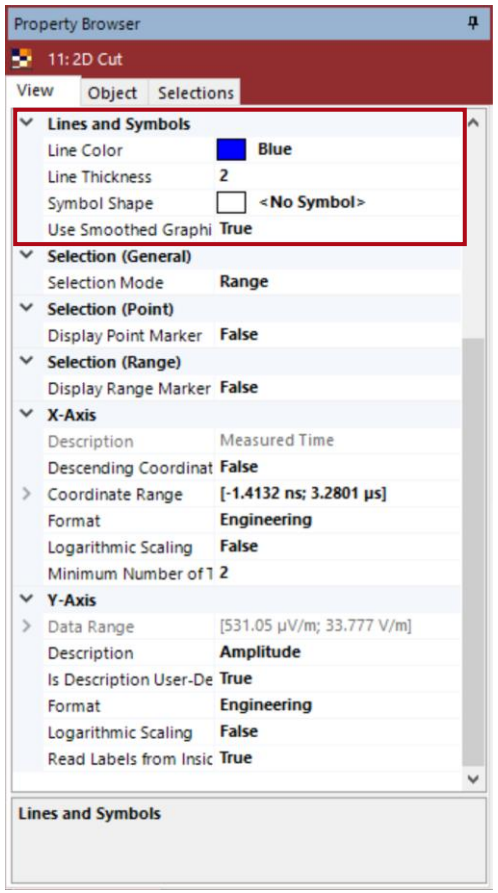
1D Cross-Section Visualization Options

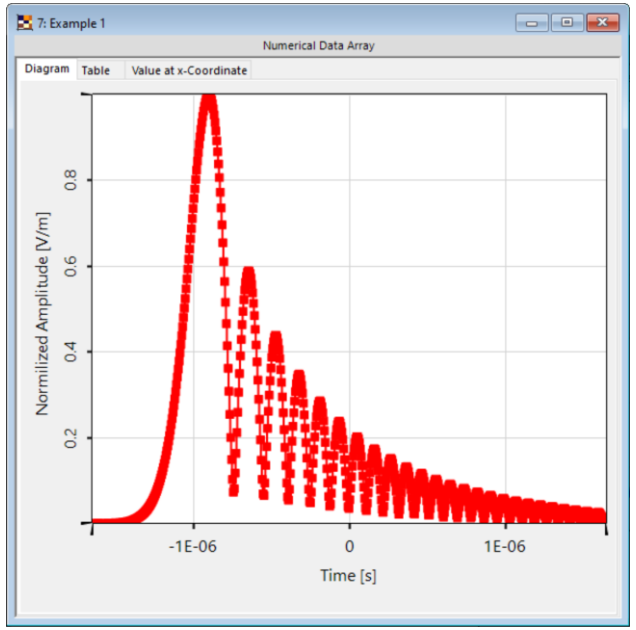


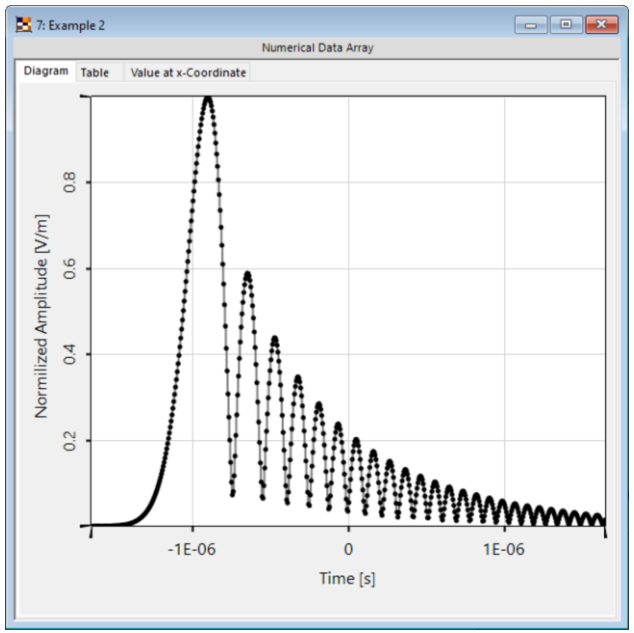


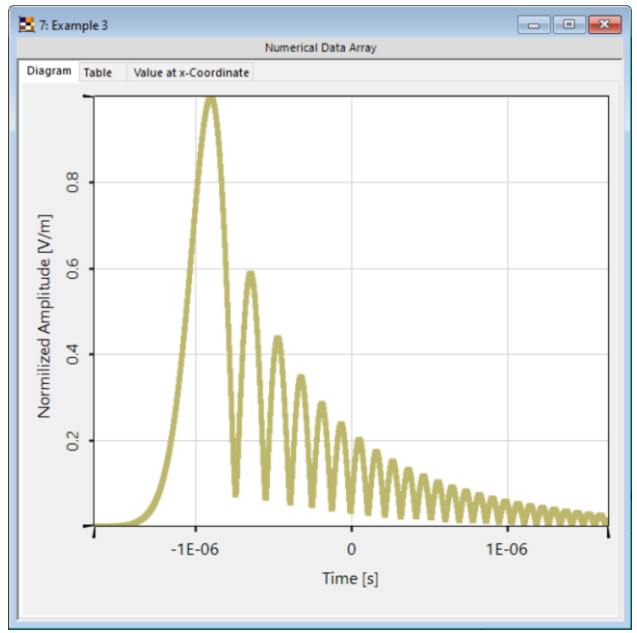
In case of 1D data, the *Property Browser* provides similar options as for 2D data. The option *Is Description User-Defined* enables the user to define a custom description of the y-axis.

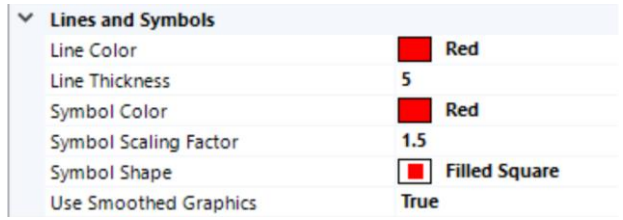
Lines and Symbols of 1D Graphs

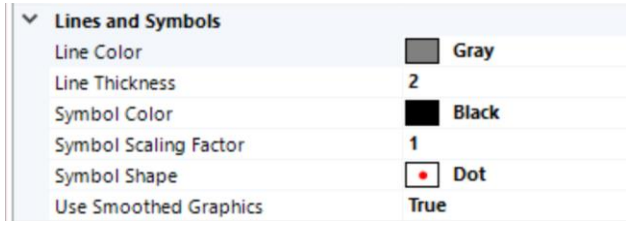






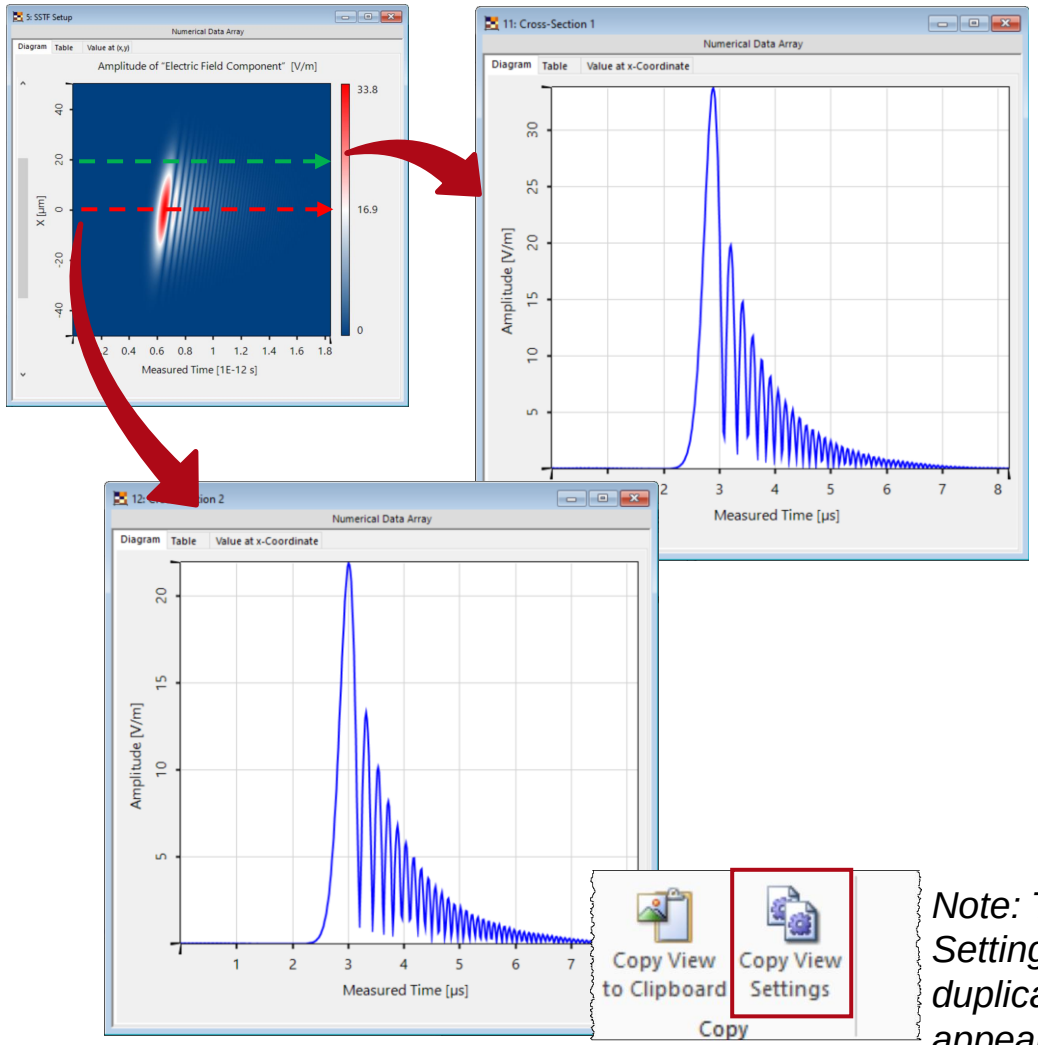




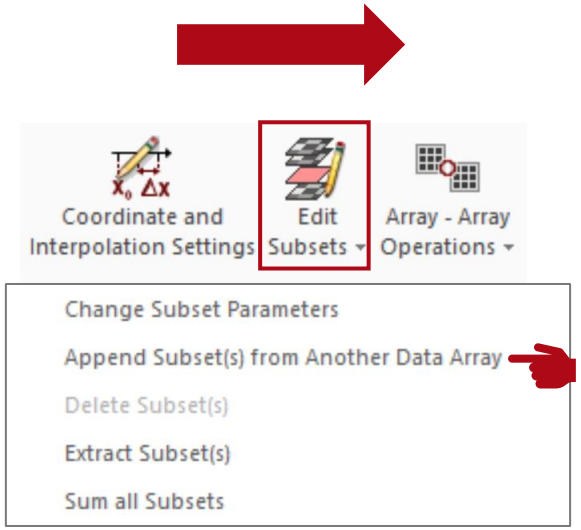


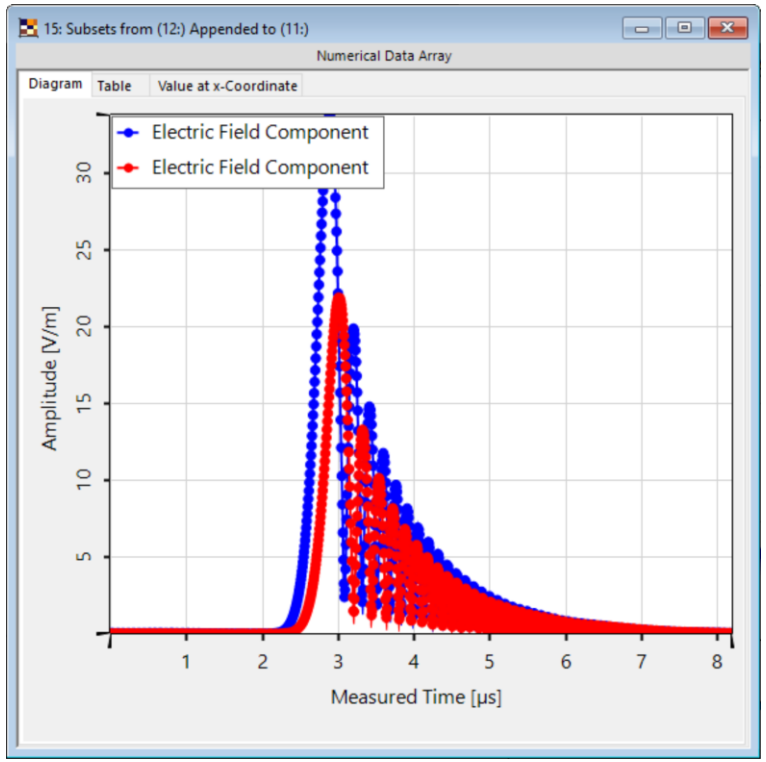
In case of 1D data, it is possible to utilize symbols to indicate the actual sampling points in the curve. Their appearance can be adjusted in the *Property Browser*.

Generation of a Multigraph Document

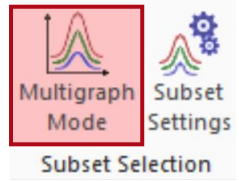


Multiple *1D Cross-Sections* can be combined to one document in the *Manipulations* tab:



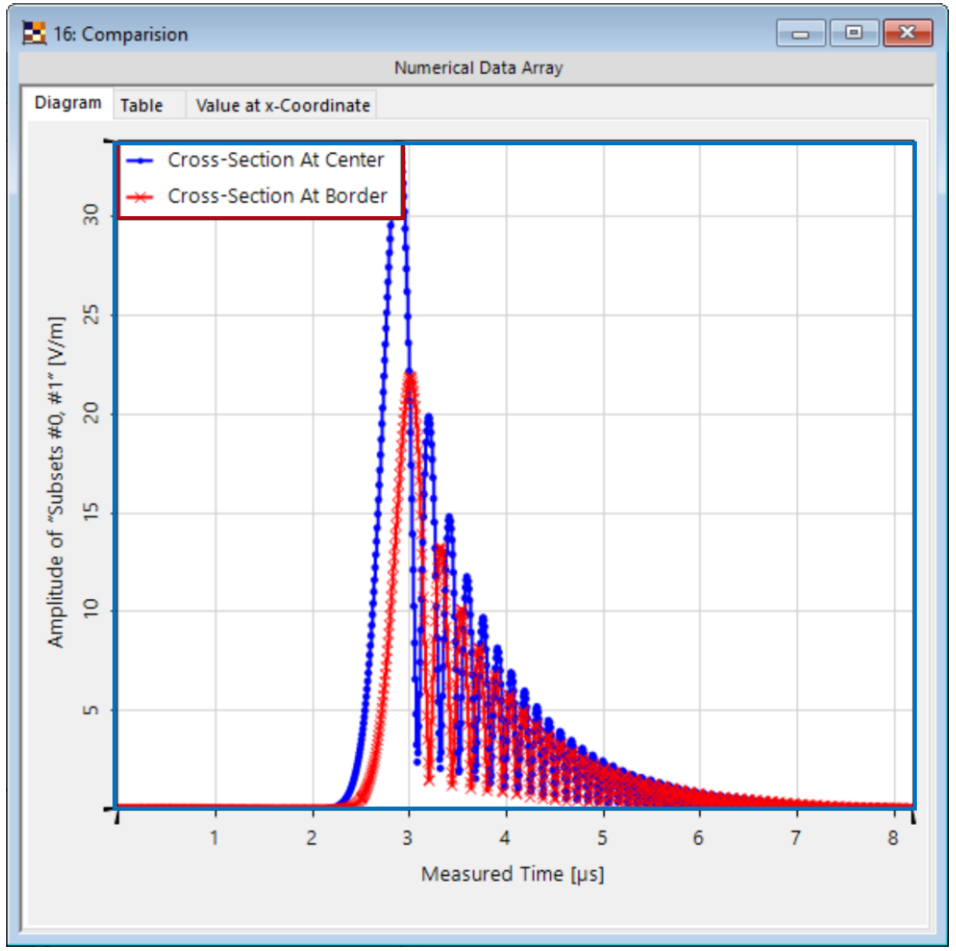


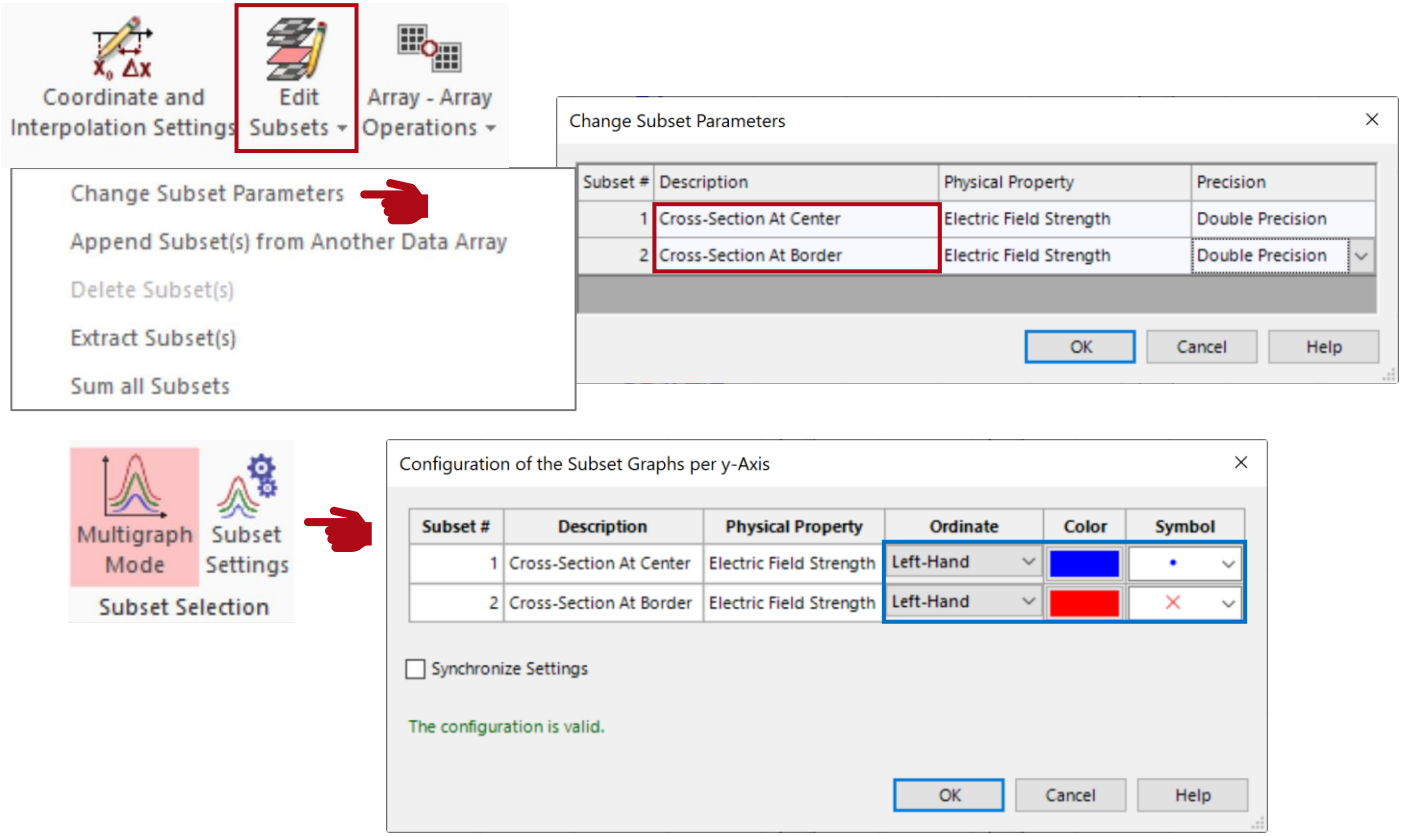
Note: The option Copy View Settings allows for an easy duplication of the appearance of two windows.



Note: Multigraph Mode needs to be active to see both results simultaneously

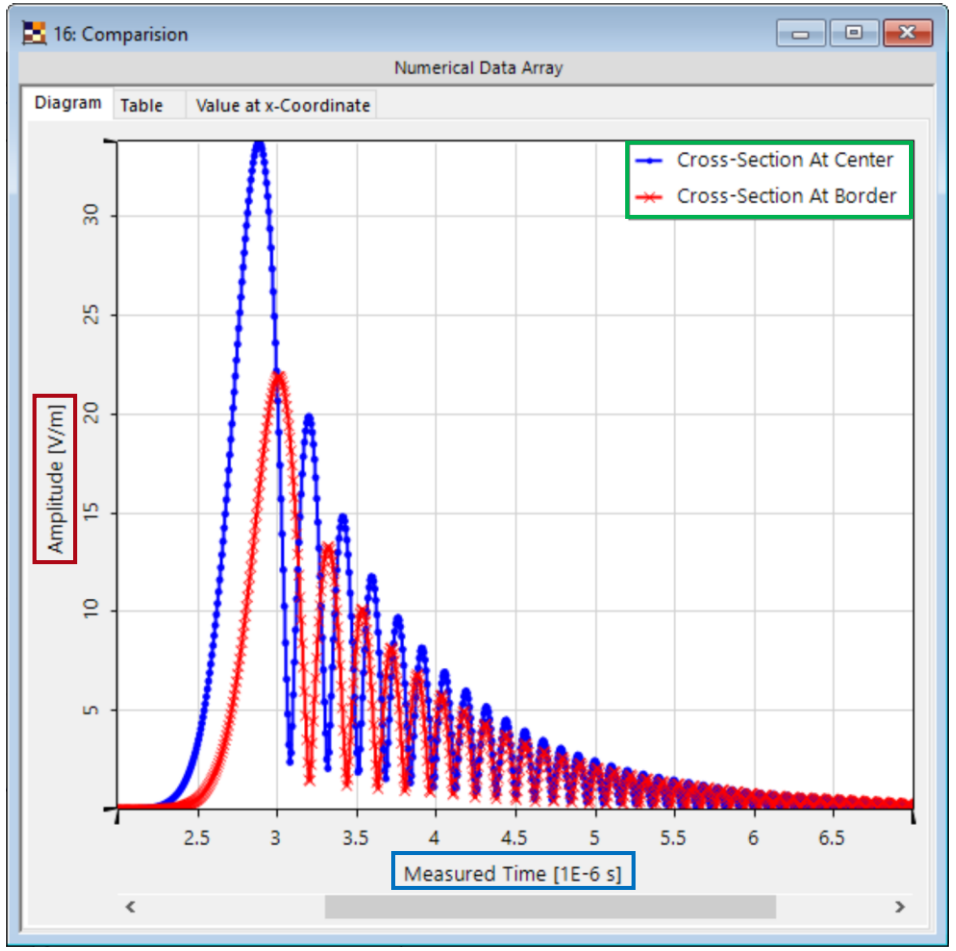
Formatting of a Multi-Graph Document

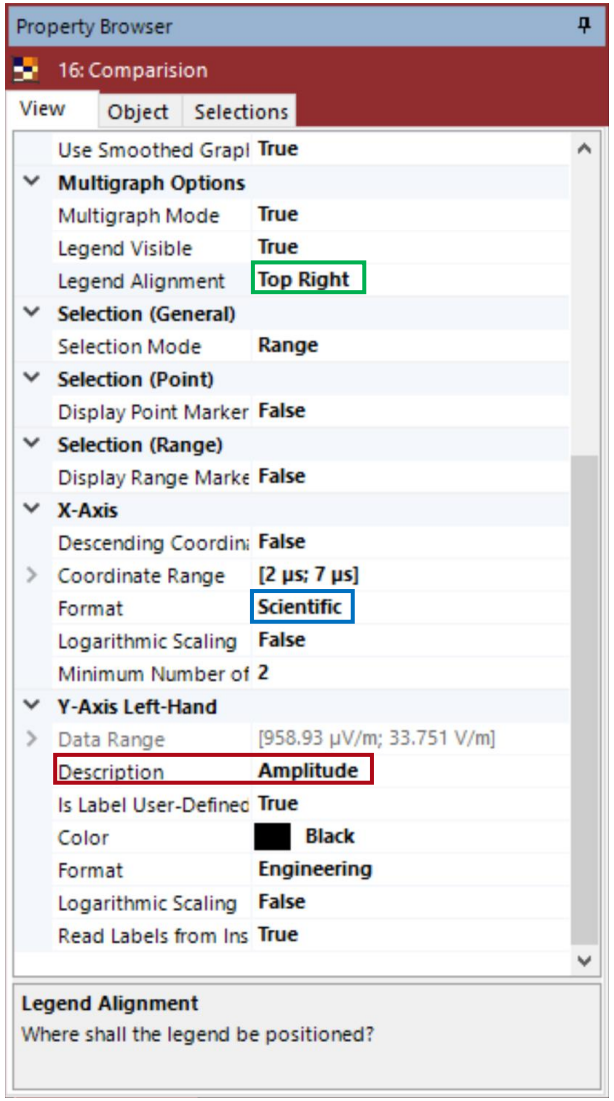




With *Change Subset Parameters* in the *Manipulations* tab the basic properties of each individual subsets (such as the name and displayed physical quantity) can be set, while *Subset Settings* in the *View* tab allows for a customized visualization (like e.g. color).

Formatting of a Multi-Graph Document





Similar to the previous cases, the *Property Browser* allows for certain adjustments. In this case, however, it is also possible to adjust the visibility and position of the legend.

Document Information

title	How to Format VirtualLab Fusion Results
document code	MISC.0094
document version	1.0
software edition	VirtualLab Fusion Basic
software version	2021.1 (Build 1.180)
category	Feature Use Case
further reading	