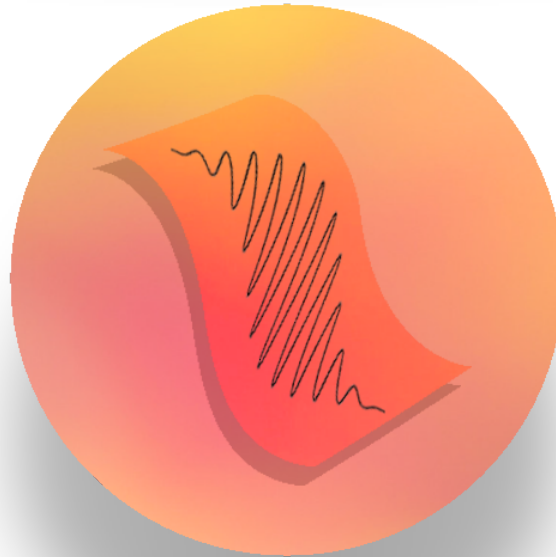


# GraphApp User Manual



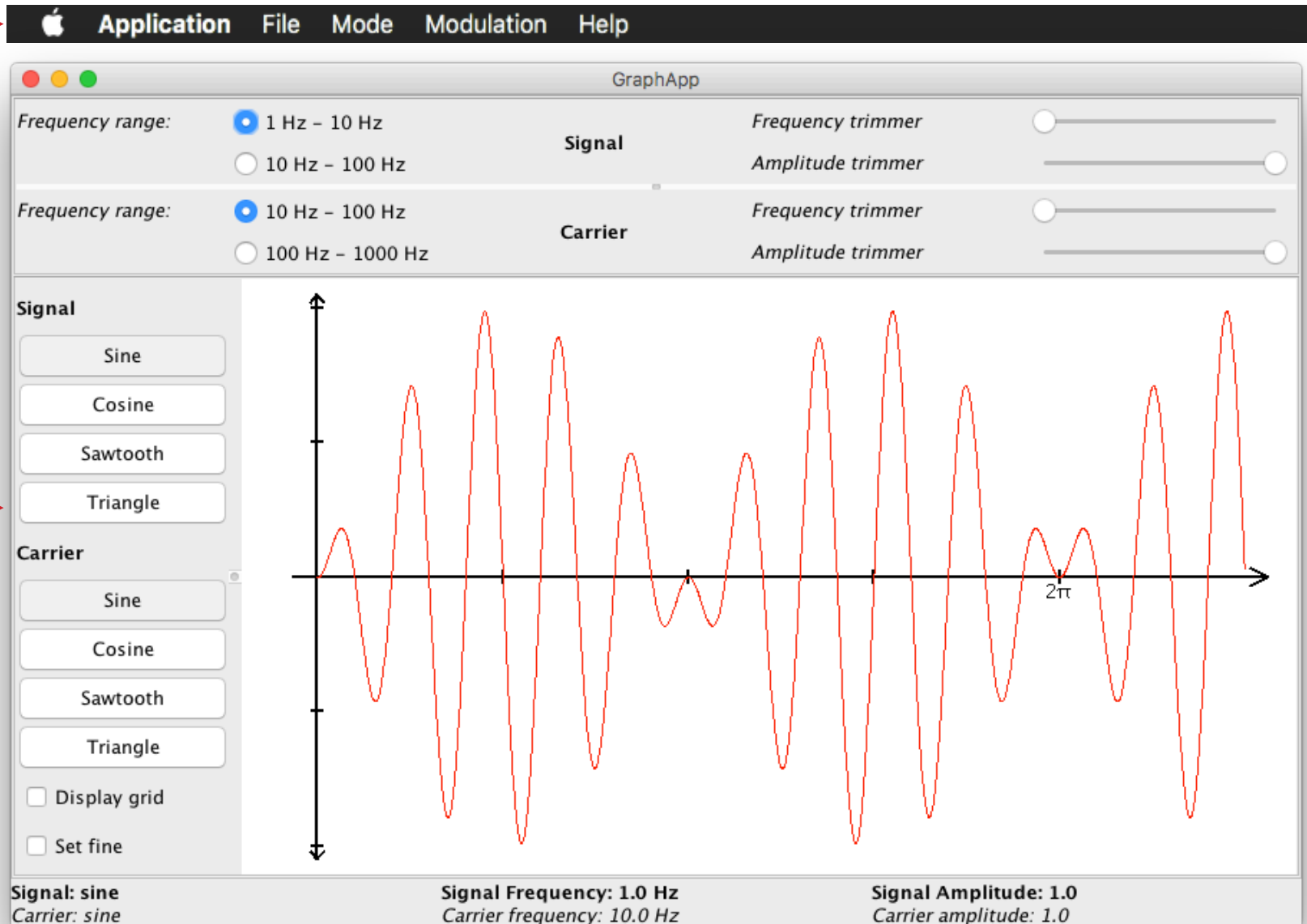
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# Overall Look

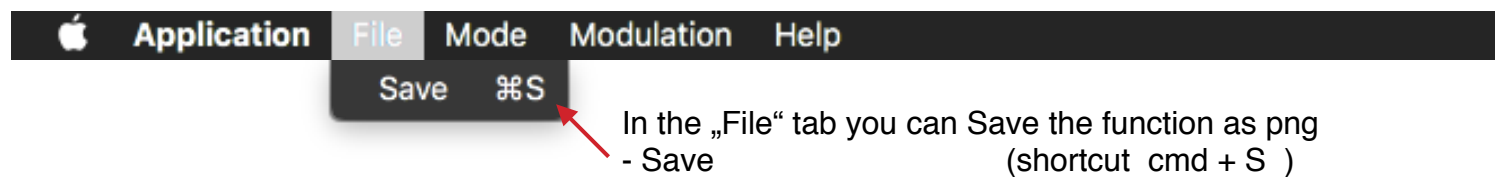
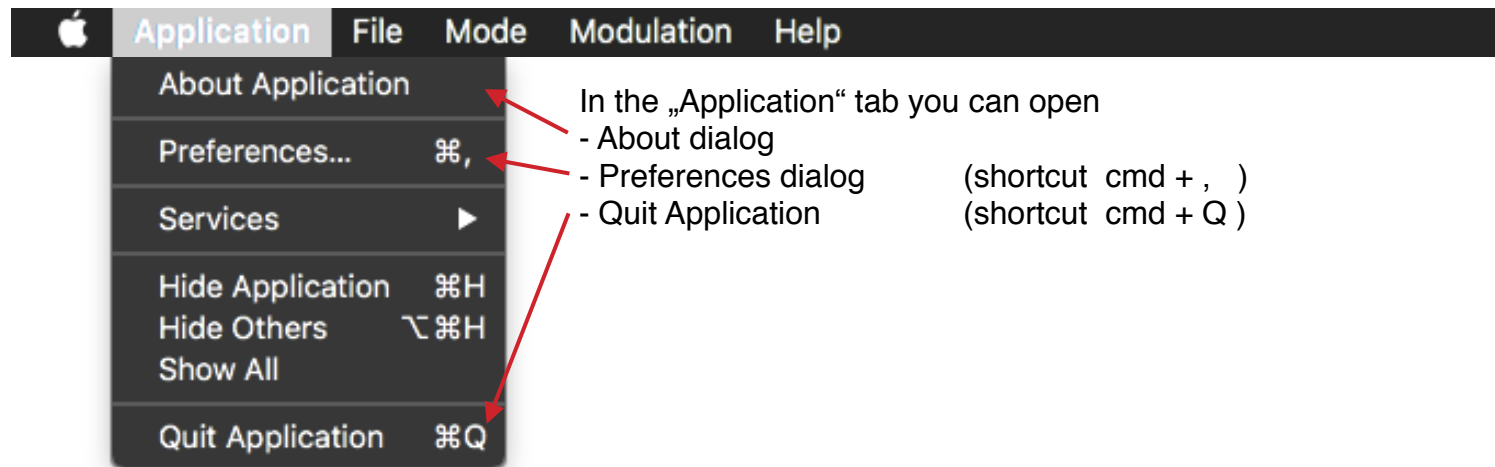
Menubar

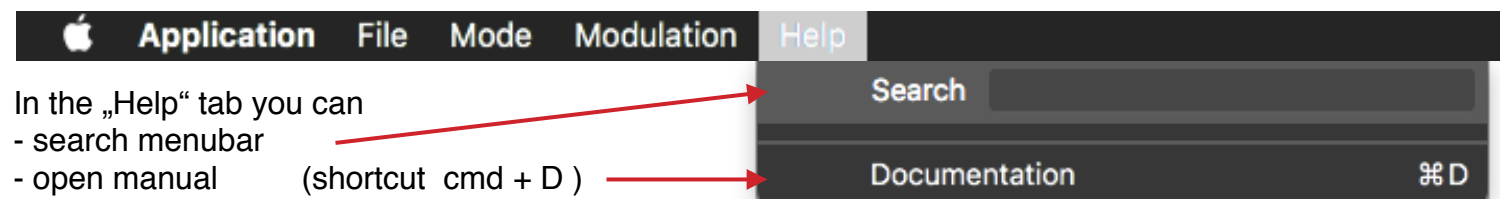
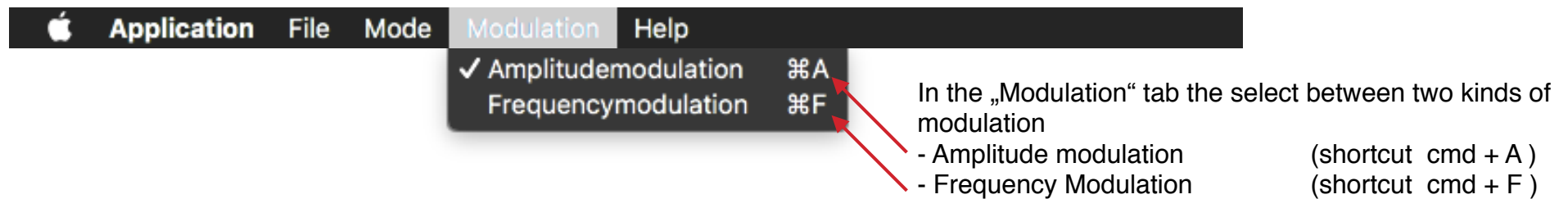
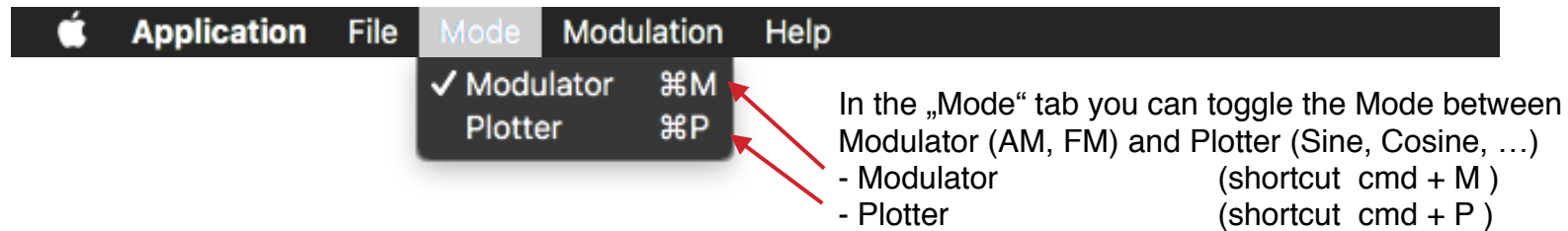


Main window



# Menubar





# Main Window

The screenshot shows the GraphApp interface with several annotations explaining its components:

- Signal settings:** Located in the top right, it includes frequency range and amplitude trimmer sliders for both the Signal and Carrier sections.
- Carrier settings:** Located in the top right, it includes frequency range and amplitude trimmer sliders for the Carrier section.
- Function canvas:** The central area displaying the plotted function, which is a red sine wave. A label  $2\pi$  is visible on the x-axis.
- Info pane:** Located at the bottom right, it displays current signal and carrier settings: Signal Frequency: 1.0 Hz, Carrier frequency: 10.0 Hz, Signal Amplitude: 1.0, and Carrier amplitude: 1.0.
- Signal function selection:** On the left, under the 'Signal' header, there are four buttons: Sine, Cosine, Sawtooth, and Triangle. An annotation points to these buttons, stating: "Choose between four different function types for the signal".
- Carrier function selection:** Below the signal selection, under the 'Carrier' header, there are four buttons: Sine, Cosine, Sawtooth, and Triangle. An annotation points to these buttons, stating: "Choose between four different function types for the carrier signal".
- Display grid controls:** Below the carrier function selection, there are two checkboxes: "Display grid" and "Set fine". An annotation points to these controls, stating: "Enable display grid" and "Enable fine mode for the slider in the top right corner".

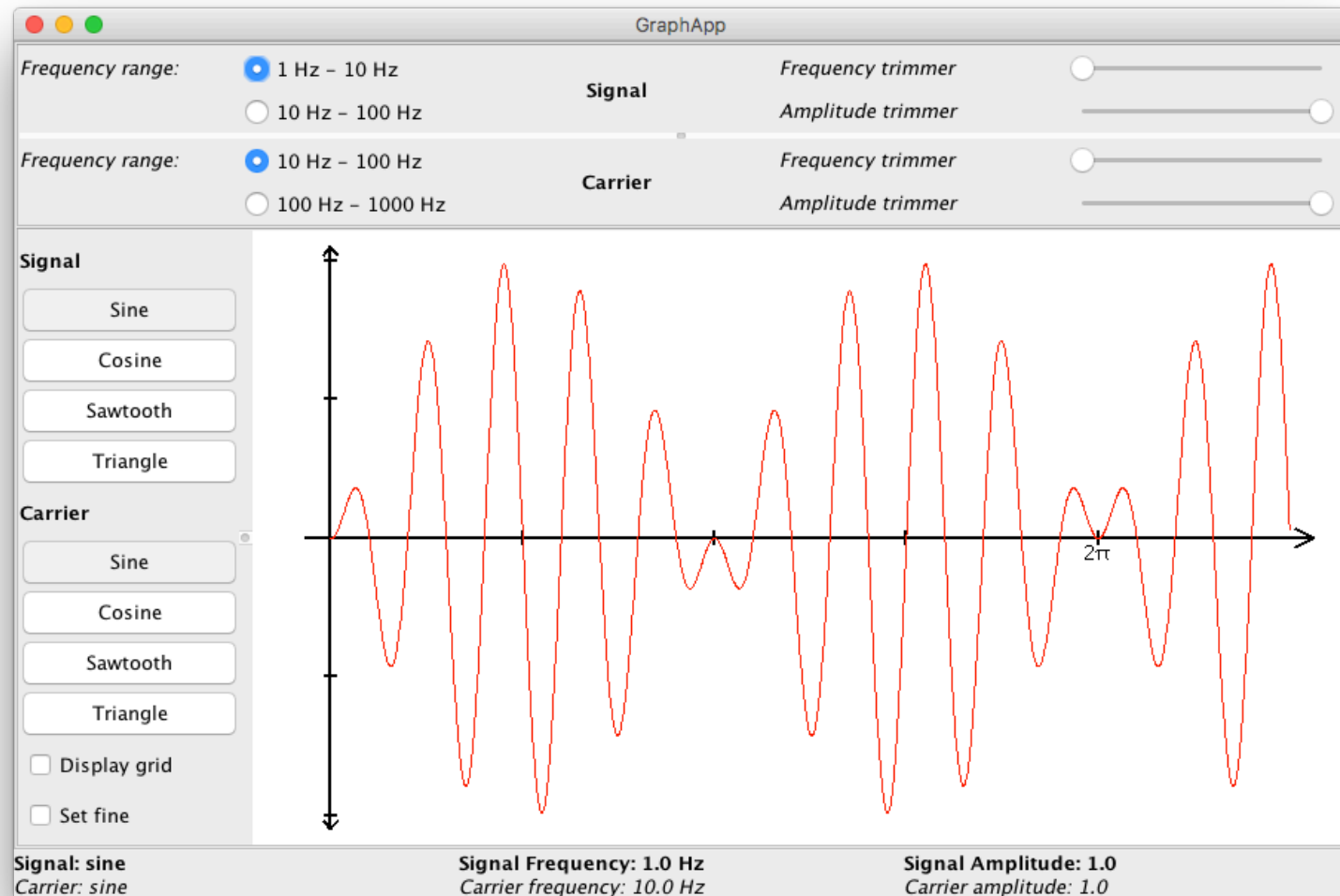
# Modes

## Modulation mode

In the modulation mode you can choose between frequency and amplitude modulation by changing the check in the „Modulation“ tab or with the shortcuts:

cmd + F for frequency modulation  
cmd + A for amplitude modulation

The frequency and amplitude of the signal and the carrier can be modified in the top right corner with the sliders and the radio buttons on the top left

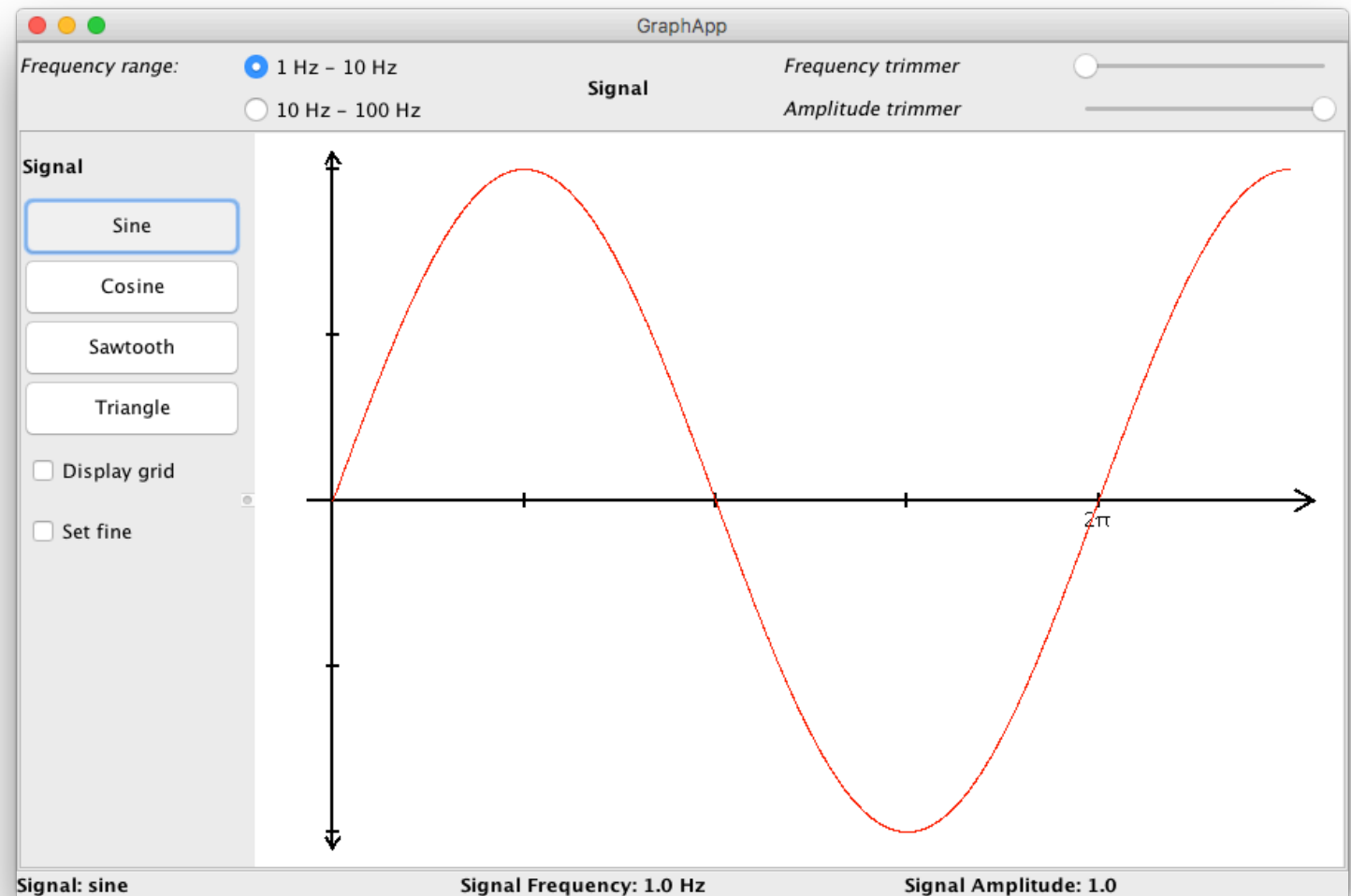


## Plotter mode

In the plotter mode you are able to plot four different functions:

- Sine
- Cosine
- Sawtooth
- Triangle

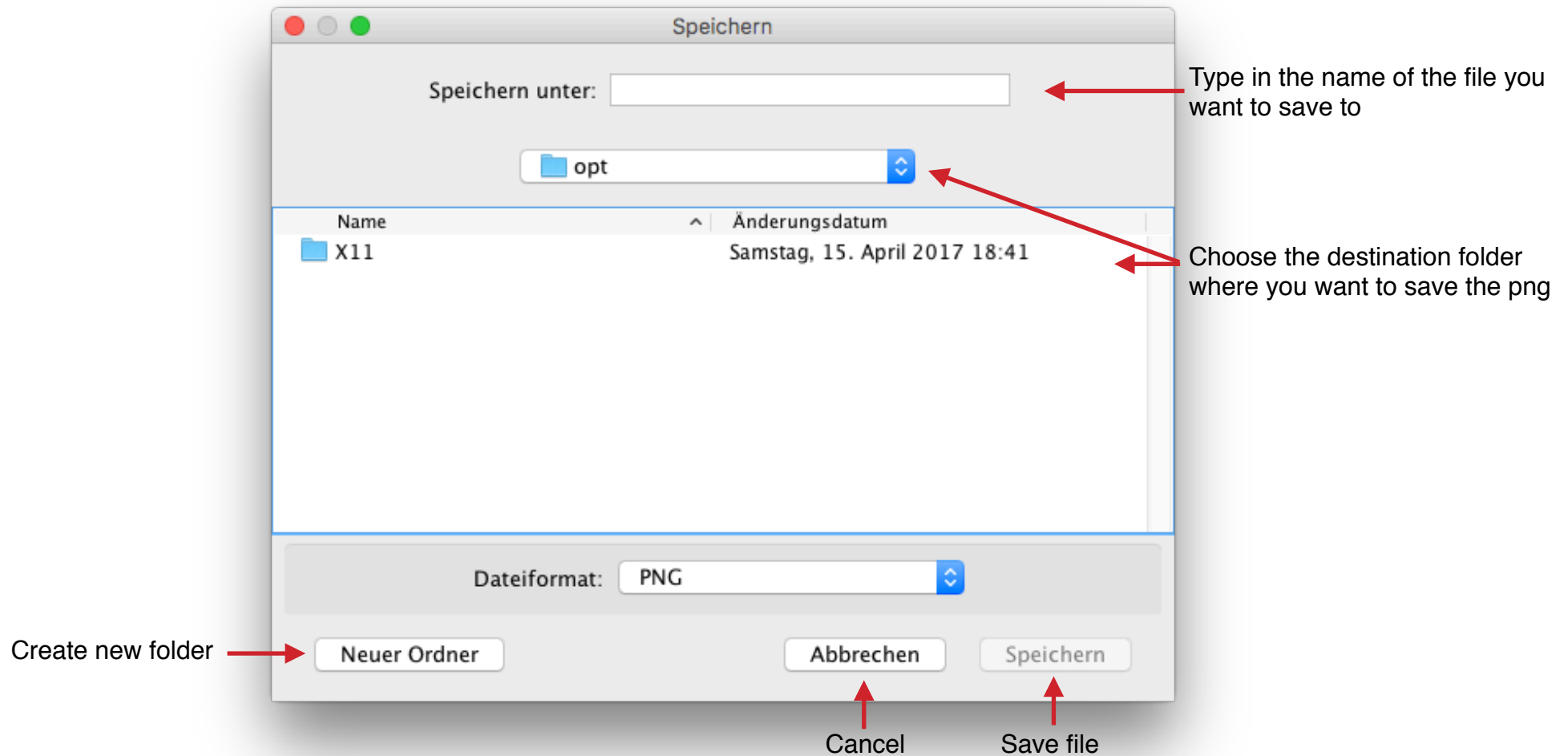
Also in this mode the frequency and amplitude can be changed with the sliders in the top right corner and the radio buttons on the top left





# Save Dialog

Open the save dialog in the File tab or with the shortcut cmd + S



## Preferences Dialog

To open the preferences dialog either use the menu bar under the tab „Application“ and then „Preferences“ or access the dialog with the shortcut cmd + ,

With these spinners on the right the colours of the canvas can be adjusted

colour of the function



Select function color

colour of the grid



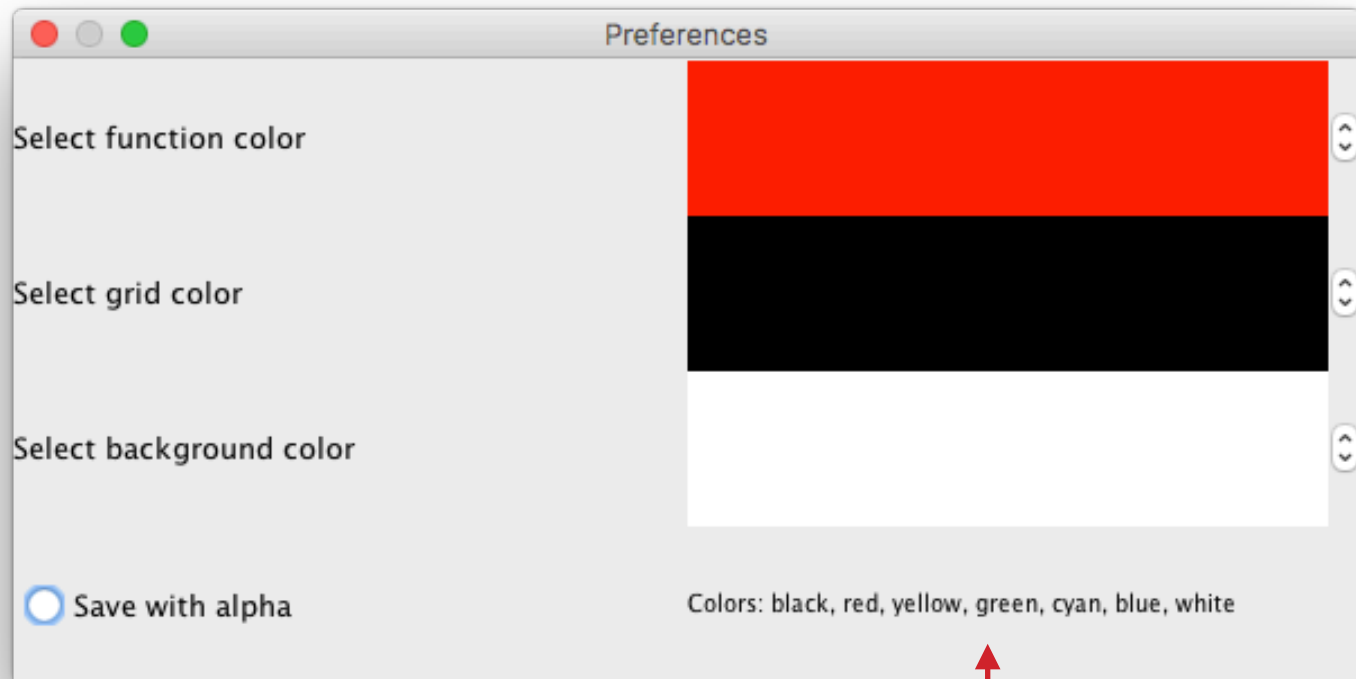
Select grid color

colour of the canvas background



Select background color

By enabling the radio button the png will have a transparent background when you save it  
If disabled the background of the png will have the color which is selected in the preferences dialog

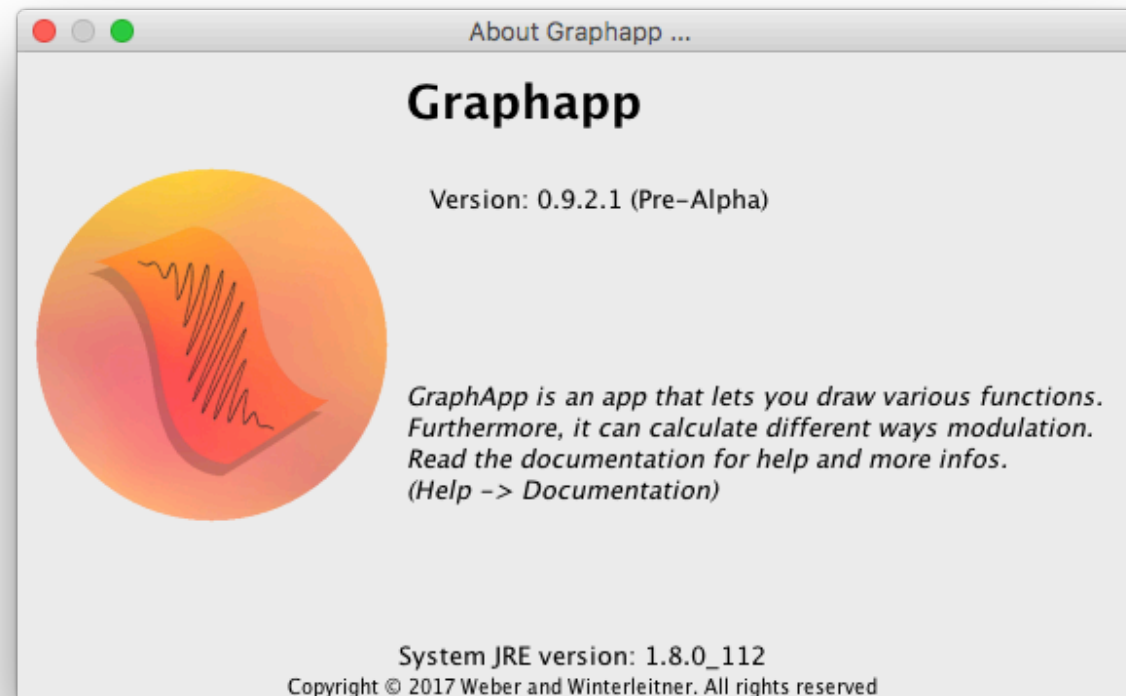


These are the colour which can be used

## About Dialog

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To open the about dialog use the menubar tab „Application“



# Information

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The app was developed on the operating system macOS and there may be some differences as shown in this manual when using the app on windows platforms. The design or the menu bar (tabs are on other positions or missing) may look different. Shortcuts on windows work with ctrl + KEY instead of cmd + KEY

The System JRE version is 1.8.0\_112

This version is a pre-alpha version and there may be some bugs.  
Please feel free to report the bugs you found. It will help us to make this app better and more stable.

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