

Freq

About the program:

The program shows that an aperiodic signal can be generated from a periodic signal if the negative phase of the signal is increased related to the positive phase (the user gives the boost ratio). Increasing the negative section to infinity gives an aperiodic signal. The period time is increasing, the distance between the components of the Fourier series in the frequency range becomes smaller. The individual components are getting closer and finally the frequency spectrum of the aperiodic signal becomes continuous.

While only defined frequency components occur in the periodic signal, in the aperiodic signal sinusoidal signals of all frequencies can be found as components, so the frequency spectrum of the aperiodic signal is continuous. If we know the response of a linear system to sinusoidal signal of all frequencies, we can in principle determine the system response to both periodic and aperiodic signals.

How to use the program:

- Use the „Step” button to draw the next step.
- The „Auto” button function as pressing the „Step” button 10 times with a little delay between each step.
- The „Show” button opens up a new window with the current results in text form.
- The „Clear” button resets the program to its default state.
- The plots can be drawn together or separated. This can be set with the choicebox on the top. When drawn separated, only the latest step will be shown, when drawn together, all steps will be shown, but in different colour.
- The multiplier between steps can be set with the textfield over the buttons.