

SimPlot3D - Simulation of 3D Plot with Parameter Variation

José Maurício Schneedorf Ferreira da Silva

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As with *SimPlot*, this program provides the same functionality, namely the visualization of the behavior of a graph as the value of a parameter (k) is varied. Unlike *SimPlot*, however, it offers three-dimensional *wireframe* visualization using the *FAST3D* command.

1 Equation

$$z = f(x, y)$$

For data input, the equation must be written in a specific format, as shown below:

$$F(X, Y, k) = \text{function}$$

The function must explicitly include the parameter k and a list of its values. It should also be noted that, if the addition operation $+$ is required, it must be written as *ADD*.

2 Files:

1. Program
2. Source code
3. Example
4. This tutorial

3 Usage and example

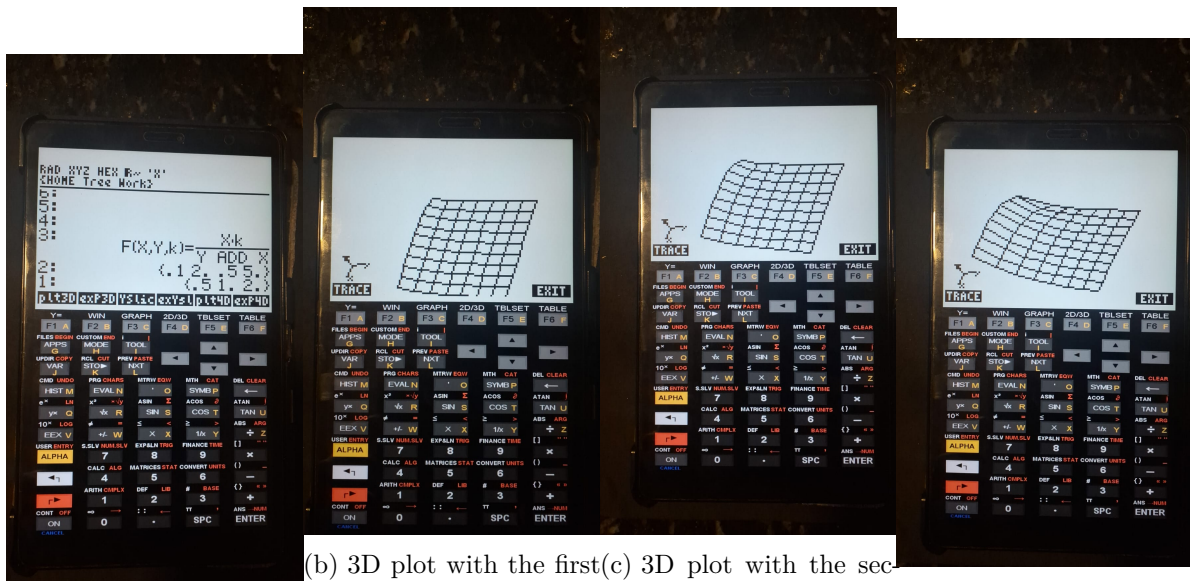
Input:

1. Formatted function; e.g., "F(X,Y,k) = (X*k)/(Y ADD X)";
2. List containing the limits of variables x and y; e.g., {0.1 2 0.5 5};
3. List of values for variation of parameter "k"; e.g., {0.5 1 2};
4. Run "SimPlot3D".

Output:

1. 3D wireframe plot for each value of "k"; switching between plots is performed by pressing the EXIT key on the graphics screen;
2. Function and lists remaining on the stack for further modification.

The figures below correspond to the example provided in the compressed file.



(a) Data input.

(b) 3D plot with the first value of k. Press EXIT for the next plot.

(c) 3D plot with the second value of k. Press EXIT for the next plot.

(d) 3D plot with the third value of k.

Figure 1: *SimPlot3D* program running on the Android version of the HP50G calculator ([Go49gp](#)), showing data input and the sequence of 3D plots navigated using the EXIT key.

Author

José Maurício Schneedorf Ferreira da Silva
Dept. Biochemistry, Institute of Biomedical Sciences
Federal University of Alfenas - UNIFAL-MG, Brazil
Email: jose.dasilva@unifal-mg.edu.br

Site: <https://bioquanti.netlify.app>

Lattes: <http://lattes.cnpq.br/0436922594542722>

ORCID: 0000-0002-2031-6315