



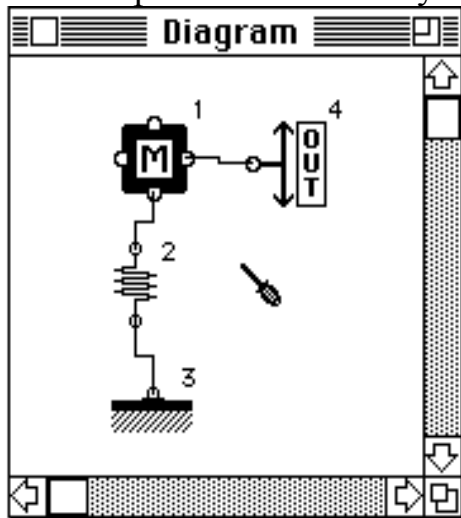
# Dynamic Simulator

## A new tool for mechanical simulations

### What is it?

Dynamic Simulator is a new program designed for modeling, simulating and analyzing dynamic mechanical systems. Using its intuitive graphical interface, you can model complicated mechanical systems and experiment with their responses under varying conditions.

As you design the model of a system, Dynamic Simulator keeps track of the differential equations behind the scenes. The math is transparent, only requiring you to enter the parameters of the system (i.e. Spring stiffness, mass weight, etc.).



The above image shows how simple modeling a system can be. Any number of components, or degrees of freedom, can be placed on the screen. Once added, connecting them is as simple as drawing a line between them with the screwdriver tool.

There are several, versatile types of components that can be added, including masses, springs, dampers, grounds, inputs (forcing functions), and outputs (data collection). The springs, dampers and inputs, can be either linear or non-linear, for complete system modeling.

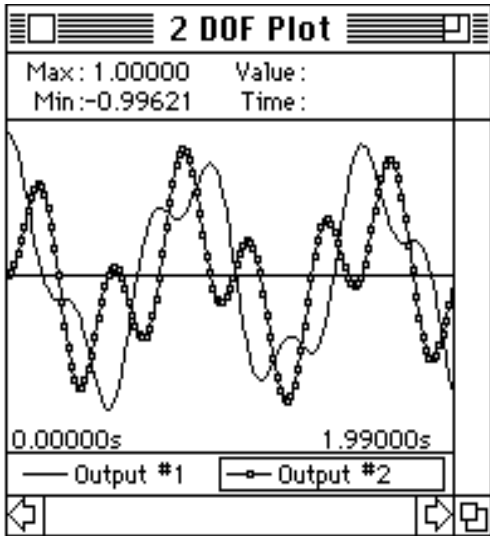
### The Simulation

Dynamic Simulator employs a fast and accurate 4th-order Runge-Kutta integration scheme to calculate the responses of the systems you set up. This algorithm is especially fast on any Macintosh computer that has a math co-processor.

The data generated by the simulation engine and collected by the outputs can be the displacement, velocity acceleration, or the sum of forces on any mass in the system.

## Data Analysis

Once a system has been modeled and simulated, Dynamic Simulator offers a set of tools for viewing and analyzing the data that has been created. First, you can plot the response of your system over time. The data from up to six different outputs can be combined into the same graph.

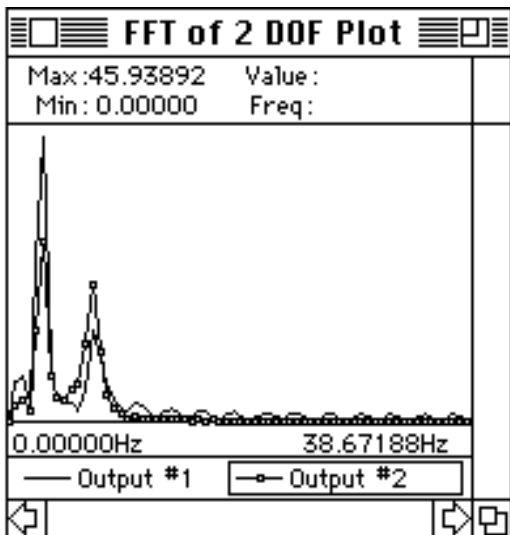


The specific data on the plot can be read by moving the cursor over the part you are interested in. You can zoom in on sections of the plot, and can save the data to either a file or the clipboard for use in other programs.

Additionally, you have control over the color, thickness, and data marker for each data set.

## The FFT Analysis

After viewing the response of your system versus time, you can use Dynamic Simulator to calculate and plot the data over the frequency spectrum, through a process called the Fast-Fourier-Transform. Like the normal plot window, you can zoom in on your data, read specific instances of it, save it, and configure its display.



For More Information...

You can obtain a demonstration copy of Dynamic Simulator by sending your name, address, and \$10.00 to:

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