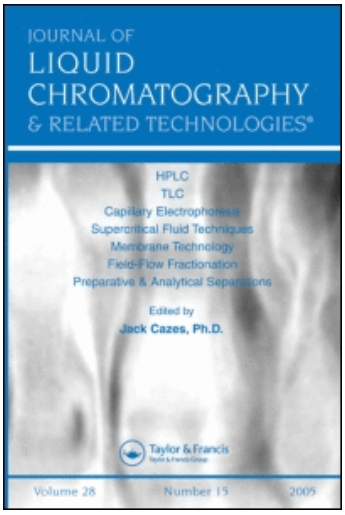

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SOFTWARE REVIEW

ORIGIN - Scientific Graphics and Data Analysis in Windows™, Version 2.0, MicroCal, Inc., 22 Industrial Drive East, Northampton, MA 01060; Price: $495.00.

Origin, Version 2.0, is a scientific graphics program which operates under Windows 3.0 or 3.1. It offers an easy-to-use object-oriented user interface with simple, direct editing of all graphics, including text, labels, number and location of tick marks, axes, data points, etc.

Although Origin will operate with as little as 170K free memory, it's advisable to have at least 2 mB, preferably more, memory installed. To determine the amount of free memory available under Windows, simply open the **Program Manager**, choose the **About Program Manager** command from the **Help** menu; free memory is given in the displayed box.

Installation required only five minutes. Typing **A:(or B:)install** transfers compressed files from the single disk, then decompresses them automatically. This reviewer experienced a flawless installation. It was necessary, however, to install the Origin icon in a separate step, under the Windows Program Manager, but this was also straight-forward.

Graphs can be prepared containing multiple plots; in fact, the number of plots per graph is dictated by the amount of available memory. You can work with multiple plot windows and layers. Each window may have multiple sets of axes. Any number of data sets may be plotted within each layer.

Non-linear, least-squares curve fitting may be applied to sets of data points. One can try fitting the data to any or all of the built-in functions, including Exponential growth and decay, Gaussian, Lorentz, Logistic, Boltzman, Hyperbolic and more; however, a valuable feature of origin is its ability to fit data to functions entered by the operator. Thus, it cannot become obsolete and is certainly not limited in its ability to fit data to functions. In fact, during the iterative curve-fitting process, you can view the result of each iteration, then modify parameters and constraints.

Many kinds of mathematical functions are supported, e.g., logical operators, ternary operators, standard scientific/math functions, as well as user defined functions. Statistical computations, including the t-Test, are directly supported.

A full-featured scripting language, called LabTalk™, is included with Origin, to simplify use of math, transformation functions, plotting, editing and other operations. It provides access to all menus and tools. In fact, Origin is actually written in LabTalk language. It is by writing a script that the operation of Origin can be modified. The commands use a DOS-like structure and syntax, so it's relatively easy to learn.

Types of plots available with Origin include Line, scatter, line-symbol, spline, staircase, hi-lo, pie, histogram, contour, polar and more. Graphs may be viewed exactly as they'll print ("WYSIWYG"); A "magnifier" tool makes it easy to zoom in on any small section of a graph to view it in detail. The unique "layer" feature permits multiple graphs to be on the same page, with user-defined relationships among axes.

Plots may be saved as templates which contain all layers, labels and plotting information. Thus, you can modify a template to affect future plots; routine, repetitive plotting may be automatically performed.

Limited space for this review prevents one from describing everything Origin can do. This program is highly recommended for those who need to treat, plot and display experimental data of all kinds. The program is fast, with very little time staring at a screen, waiting for something to happen. This alone puts Origin above many other scientific plotting programs. This reviewer heartily recommends Origin. It will become **the** software of choice as increasing numbers of scientist become familiar with it and apply it to the solution of complex problems.

Reviewed by

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