

# Software Review

## MACSYMA 2.0 FOR WINDOWS

*Reviewed by Dr. Mark French,  
Aerospace Engineer with Wright Laboratory.*

The addition of symbolic processing to the engineer's mathematical toolbox greatly expands the available options for solving problems. Macsyma offers a very complete symbolic analysis package called Macsyma along with a numerical PDE package called PD-Ease. This is a review of Macsyma release 2.0 for Windows (PD-Ease will be the subject of a later review).

The package was installed on a 486-66DX2 PC with 16 MB RAM running Windows for Workgroups 3.11 and DOS 6.20. Installing the program from the eight compressed floppy disks was uneventful. Any minor memory conflicts on your machine should be resolved before running this program. Loading takes a surprisingly long time. Macsyma claims that, on a fast machine, loading time is decreased by using disk compression. The time lost to decompressing the files is more than countered by the smaller files being retrieved from the disk.

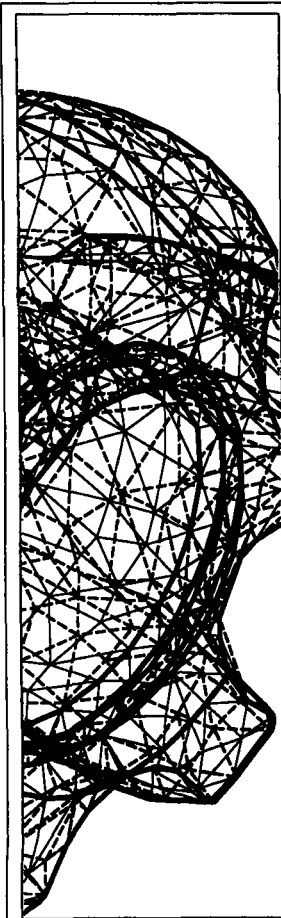
Documentation is very complete. I was pleased to be able to get to work by reading the "Getting Started" chapter and just flipping to the section I needed. Macsyma also has what I think is some of the best on-line documentation around. A feature called Template will even write the commands for you after you fill in the necessary information.

The symbolic capabilities of the program are very broad, including algebraic manipulation, integration, differentiation, array and vector functions, Laplace transformations and ODE solutions. While the range of capabilities is somewhat daunting, the fundamentals come quickly and a new user can be producing useful results after an hour or two of use. I found the ODE solver to be particularly useful.

The program can be run in either batch or interactive mode. This is a very useful feature that allows complicated manipulations to be written into a macro and stored for debugging and later use. The batch mode includes conditional statements and loops which allow automating very long calculations.

Generally, the Windows implementation of the program is good, with all the clipboard features enabled. A very nice feature is the use of notebooks. These allow the user to store sessions as documents for later use. However, the command lines are identical to the character-based VAX version of the program I used about five years ago. Even though the character lines are nicely ensconced in window frames, they are still character lines from the old main-frame days and can be clumsy to use.

Macsyma is a very powerful program that I think would be useful in a wide range of subjects. Certainly, anyone involved with complicated derivations should give this program a try.



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