CONVERGE, Version 3.0
SOFTWARE FOR ALGEBRA THROUGH CALCULUS

A SOFTWARE REVIEW[1]

LOTFI TADJ

Operations Research Program
Florida Institute of Technology
Melbourne, FL 32901, USA

ABSTRACT

Although intended for college teachers/students, *Converge* presents a feature that may interest all scientists: it allows an easy export of graphic files to most known word processors, specifically to the EXP, Version 2.1, a powerful WYSIWYG mathematical word processor.

1. INTRODUCTION

Importing a graph to a word processor is not an easy task. The difficulties are multiple: the word processor and the graphics software may not be compatible, the text file may increase tremendously in size after importing the graph, it may be difficult to control the scaling of the graph, or the process itself of importing the graph may be too arduous. *Converge* seems to overcome quite easily most of these difficulties. To the limited extent to which we experienced its capabilities, we found it to be accurate and easy to use. It has very efficient graphics features and it is of excellent quality.

2. USING *CONVERGE* TO PREPARE GRAPHS FOR WORD PROCESSORS

Graphics generated by *Converge* can be imported directly to most known word processors: *WordPerfect*, *Microsoft Word*, and **EXP**, *The Scientific Word Processor*. In particular, *Converge* has a special interface with **EXP** that we tested and that

---

proved to be quite handy.

2.1 **EXP** and EXPGLIB:

EXP 2.x is a powerful word processor designed for the creation of scientific reports containing mathematical formulas. Although a WYSIWYG (What You See Is What You Get) program, **EXP** is not just an equation editor. It is a full document processor. It is ideal in its ability to handle many different fonts. The only shortcoming we found to this program is the clumsy way it incorporates graphic images created by other software packages. The **EXP** graphics library manager, EXPGLIB, requires a surprisingly difficult set of operations, in comparison with the user-friendliness of the rest of this software.

2.2 **EXP** and *CONVERGE*:

A graph or diagram created by either *Converge* or any other graphics program that produces PCX files may be directly imported by *Converge* 3.0 to **EXP** without having to run EXPGLIB. The advantages over EXPGLIB are substantial:

− procedure: the procedure used by EXPGLIB is quite complicated and primitive. That of *Converge* is to the contrary very simple and easy to implement.

− scaling: it is almost impossible to control the scaling of the graph before import, with EXPGLIB. With *Converge*, users have the option to control the width and height of the graphic image on the printed page to the nearest hundredth of an inch. They may even automatically scale the width or the height. Also, two different types of automatic scaling are available.

Following are two **EXP** files where graphs created with *Converge* have been imported using *Converge* and EXPGLIB respectively. Note that both files did not occupy more than 300 bytes after import of the graphs although the PCX file itself was of more than 6,500 bytes.

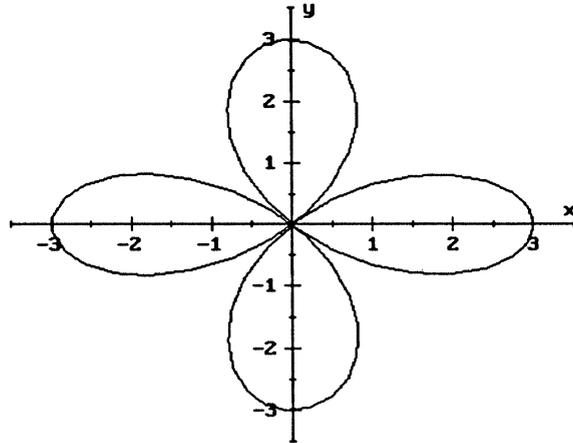R = 3COS(2θ)   θ ≤ θ ≤ 2π

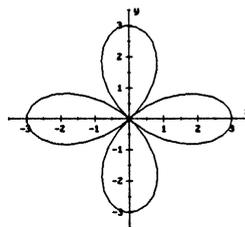Figure 1: Graph created and imported with *Converge.*

Figure 2: Graph created with *Converge* and imported with EXPGLIB.

To further experiment, we next created a graph using the *Draw Perfect* software. Using *Converge* to export it, we obtained figure 3:
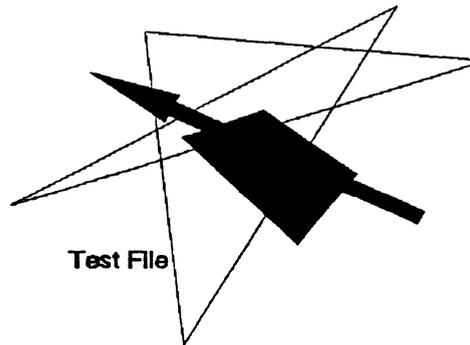
Test File

Figure 3: Graph created with *DrawPerfect* and imported with *Converge*.

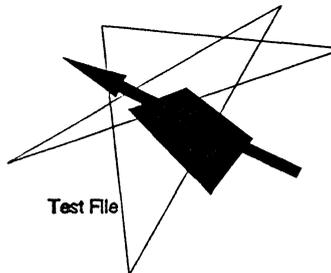Importing it with EXPGLIB into an **EXP** file produced the following result:

Test File

Figure 4: Graph created with *DrawPerfect* and imported with EXPGLIB.

Again both files do not occupy more than 300 bytes whilethe PCX file needs 28,548 bytes.

A question may be raised why not use *DrawPerfect* in conjunction with *WordPerfect*. The answer lies in the difference between **EXP** and *WordPerfect*: **EXP** is more appropriate for scientific reports which may possibly require many mathematical equations.

3. USING *CONVERGE* AS A TEACHING/LEARNING TOOL

The outstanding capabilities of *Converge* make it very efficient as a teaching/learning tool at the college level. It successfully covers the fundamental aspects of mathematics: algebra, calculus, linear algebra, and trigonometry. Users do actually <u>see</u> what some of the abstract notions mean and how they relate to each other. We believe it would be very appropriate for college mathematics courses.

4. CONCLUSION

Converge has many more features than mentioned in this short review. We would certainly recommend it to scientists in search of a graphics software easy to use, yet efficient enough to produce high quality graphs. We would also recommend it as a supplement for college mathematics courses.

Product Reviewed: *Converge*
JEMware
The Kawaiahao Plaza Executive Center
567 South King Street, Suite 178
Honolulu, Hawaii 96813-3076

Phone: 808-523-9911
FAX: 808-545-3503
(Price $139.00).