

## Re: Mathematica vs. MACSYMA

**Source:** <http://sci.tech-archive.net/Archive/sci.math.symbolic/2004-12/0284.html>

---

**From:** Albert Reiner (*areiner\_at\_tph.tuwien.ac.at*)

**Date:** 12/21/04

Date: 21 Dec 2004 16:08:33 +0100

[Matthias <no@spam.pls>, 21 Dec 2004 09:51:25 +0100]:

> *As far as I know, MACSYMA is still sold commercially. There is a free  
> version based on older sources called Maxima. I've only looked at it  
> briefly. My impression was that in terms of documentation, features,  
> bug-removal it has quite a while to go before it matches Mathematica  
> (or Maple).*

That is definitely the case.

The question is what the OP really wants to do: If one CAS supports everything s/he wants to do out of the box, and if it is known that the results can generally be trusted, then s/he should go with that CAS.

Given the sheer size of Mathematica and the former MathSource, chances of finding some code for some type of problem are much higher than with Maxima. However, Mathematica is known to get many types of things wrong (e.g. when branch cuts are concerned) so in my experience you always end up programming tests and writing tools to assess the reliability of the results Mathematica gives you.

If that is also the OP's experience – and the statement "I'm tired of buggy Mathematica" may indicate that is indeed the case – then one should weigh the costs of writing those tests in Mathematica and of programming the needed functionality in Maxima.

I personally made the switch from Mathematica to Maxima after several years of using the former, and I have not regretted it. Availability of the source code, some modest Lisp skills on my part, and a most helpful mailing list are an important factor, but mainly it is because Maxima as a programming language (with some simple auxiliaries added) allows one to avoid a lot of problems that are inherent in Mathematica's design. That said, Maxima is far from perfect, and my growing familiarity with it has made me realize not only the marked similarities between the older program and the younger one but also a couple of points where Mathematica really got it right.

- > *Maxima might be a very cool project if you want to learn about CAS and*
- > *are not afraid of slightly old-style LISP code.*

You do not need to know any Lisp (and certainly no LISP – that spelling died long ago) for using Maxima. You can access the Lisp process, though, if you want to, but you will not see anything of it without explicitly asking for it.

- > *If you are just a CAS \_user\_ and happy with a slightly out-of-date*
- > *software you'll be better off if you \_simply\_ \_don't\_ \_update\_ your*
- > *current version of Mathematica. While not as cool as Maxima (Lisp,*
- > *source code, long history), it is the more practical solution right*
- > *now.*

Whether that is an option depends on the OP's circumstances: campus licenses, ...

Albert.