

Up & running with L^AT_EX

Justin Hiester

1 Why L^AT_EX?

Learning to use L^AT_EX requires a significant investment of time and mental resources so asking why you should bother to learn it is a very good question. I can't answer it for you however. I learned it because I was fed up with Microsoft's Equation Editor. I have found L^AT_EX to be much simpler to use for communicating information that is heavily peppered with mathematical symbols and/or scientific jargon. L^AT_EX has a steep learning curve but once comfort and proficiency have been achieved the amount of time and frustration it saves over using Equation Editor (and Word in general) becomes apparent. Some of the advantages of L^AT_EX are that it is free, it can produce documents in the portable document format (.pdf) natively, you can edit the files on both a Mac and a PC, your professors will love you because they too know and love L^AT_EX, and that your professors will be able to read your homework for a change.

The biggest disadvantage of L^AT_EX is its steep learning curve. The syntax and document structure are not at all intuitive to what most people are used to in a document editor. It is full of bizarre syntax and subtle nuances that can foul up anyone not paying attention to what they are doing. Another disadvantage of using L^AT_EX is that it requires above average computer literacy. Despite these disadvantages (and this is by no means a complete list), with a little perseverance and time, I believe the rewards of learning and using L^AT_EX outweigh the frustrations of not using it, as well as the time taken to learn it.

I made this document because I had a hard time learning to use L^AT_EX and I like L^AT_EX so much that I think everyone in math and the scientific fields should use it. So it is my hope that by providing a stepping stone and a list of the resources that I found helpful when I was learning to use L^AT_EX that other people will learn it. I should note that this document assumes that the computer you are using is running Windows. I use a Mac as well as a PC and the instructions below are analogous.

2 What you need

The basics of getting L^AT_EX up and running entail downloading and installing a program known as MiKTeX. The current version as of this writing is 2.7.

The installation is straightforward and after all is said and done the files should be in the folder C:\Program Files\MiKTeX 2.7. Once you have this program installed you can start using L^AT_EX. This is the minimum you must do to use L^AT_EX as long as you also have a basic text editor like wordpad, notepad, vi, pico, etc. To make your life much simpler, read on...

To make your experience with L^AT_EX less frustrating, I recommend downloading a graphical user interface (GUI) to make the manipulation of your documents simpler. My personal preference is to use a GUI called TeXnicCenter. One of the features of this particular GUI is that if TeXnicCenter sees that you have used a package that is not already installed, it will search the internet for the package and install it for you. This can potentially save you a lot of time and frustration. Other GUI programs for L^AT_EX include WinEdt (this is the editor the school has installed), WinShell, LED, and I'm sure there are others.

Now that you have (hopefully) a working installation of L^AT_EX, go to the General Usage section of this document and click on the Introductory Tutorial link. This website will guide you through the creation of your first L^AT_EX document. This tutorial does not use a GUI environment so you'll get to see just how much easier life is when you use one.

3 Helpful references

3.1 Graphical User Interfaces

- TeXnicCenter
- WinEdt
- LED

3.2 General Usage

There are a lot of different pages on the internet describing how to do almost anything you could possibly want to do with L^AT_EX. The best resource at your disposal is google. The sites listed below are a few of the ones that helped me get started and that I routinely go back to if I have troubles.

- Introductory Tutorial
- Thesis/Dissertation Guide
- Guide to writing scientific papers in L^AT_EX
- Creating tables
- Typing a document with math symbols

3.3 \LaTeX Symbols

- Quick reference
- Comprehensive reference

3.4 Errors

- This site will help with basic errors

For the more esoteric errors google is your best bet.

There is also a package called LaTeX Beamer that is a very powerful and free way to create slick looking slide presentations.