

# Messing with Math Formula Plugins Again

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January 5, 2013

Since 2013.11.15, I have been using the MathJax plugin. The main reason is that MathJax performs much better in terms of compatibility than the ASCIIMath Image Fallback Scripts. Furthermore, from a long-term perspective, using MathJax is the right choice.

Official website: <http://www.mathjax.org/>

Copying math formulas: <http://www.mathjax.org/demos/copy-and-paste/>

——- The following content is outdated (written on 2013.01.05) ——-

Previously, I had always been using the math formula plugin perfected by the "Math Research Forum" to display mathematical equations. It was very simple to use and loaded quickly, so I ended up using it for three years.

However, after entering university, as I learned more things, the number of mathematical symbols increased, and the shortcomings of Brother Guo's plugin became apparent. The most fatal issue was that it actually could not display  $\hbar$ , which was unbearable for someone like me studying quantum mechanics... (though the new version of Brother Guo's plugin has already added this symbol). Another drawback is that Brother Guo's plugin underwent significant simplification, making the input of math formulas much easier, but consequently, its support for standard LaTeX code became insufficient. Over time, this brings a disadvantage: poor portability. If one day this plugin becomes unavailable, it would be difficult to find a replacement. Considering these factors, I always tried to use standard syntax rather than simplified syntax when writing LaTeX code. Later, after the  $\hbar$  issue arose, I immediately switched to the powerful MathJax plugin (I considered JsMath, but found its inline formula display effect to be not very good).

MathJax uses very standard LaTeX syntax, offers diverse effects, and displays beautiful mathematical formulas. However, I still felt a slight deficiency: it uses its own functionality to display formulas, so the formulas do not support copying, which is not conducive to the dissemination of knowledge (though there isn't much "knowledge" here anyway). Additionally, the loading speed is a bit slow. After Brother Guo fixed his plugin, I considered switching back, but due to concerns about standard syntax, I remained hesitant...

Today, I rediscovered the prototype of Brother Guo's `tex.js`—the [ASCIIMath Image Fallback Scripts](#). I found that it actually supports standard syntax, which caught my eye, and I immediately decided to modify it into this version. During the process, I discovered many incompatibilities, so I kept modifying, debugging, modifying, and debugging... In fact, they were just some very simple modifications, but they took me four or five hours. A person who doesn't understand code really can't afford the trouble... By 4:00 PM today, I finally produced a version of ASCIIMath Image Fallback Scripts that I am satisfied with. Its features are as follows:

1. It uses relatively standard LaTeX syntax to display mathematical formulas, which are highlighted in blue. You can place LaTeX code between two dollar signs (inline formulas) or between double dollar signs (displayed on a separate line).

2. When MathML is supported (such as in the Firefox browser), it uses MathML to display formulas, which results in quite good display effects. When not supported, it calls images from [MathTex](#), which is the "big brother" of MineTex. The image quality is acceptable, though inferior to MathML.
3. IE itself does not support MathML, but it can support it by installing MathPlayer. However, I am using IE 10 under Windows 8; after installing MathPlayer, the formulas do not display correctly (even in compatibility mode). I haven't had the chance to test other versions of IE.

**Below are some formula demonstrations:**

Fractions:

$$\sum_{i=1}^{\infty} \left(\frac{1}{2}\right)^i, \sum_{n=1}^{\infty} \frac{1}{n^2} = \frac{\pi^2}{6}$$

Radicals:

$$c = \sqrt{a^2 + b^2}, p = \sqrt[3]{x^2 + y^2}$$

(This cube root does not display correctly under MathML; I am working hard to fix it...)

Matrices:

$$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}, \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

Multi-line formulas:

$$\begin{aligned} \nabla \times \vec{B} - \frac{1}{c} \frac{\partial \vec{E}}{\partial t} &= \frac{4\pi}{c} \vec{j} \\ \nabla \cdot \vec{E} &= 4\pi\rho \\ \nabla \times \vec{E} + \frac{1}{c} \frac{\partial \vec{B}}{\partial t} &= \vec{0} \\ \nabla \cdot \vec{B} &= 0 \end{aligned}$$

The MathTex official website has more examples and a formula editor:

[http://www.forkosh.com/source\\_mathtex.html#examples](http://www.forkosh.com/source_mathtex.html#examples)

**Note: The old version is no longer functional**

<https://kexue.fm/archives/83/>

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