



**Bumpy Road
Towards a Good
LaTeX Visual
Editor**

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Ben Davies

Collaboration



Is There a Need?

- ‘My [supervisor] doesn’t know \LaTeX but I need to work with them’
- Proofreading tool whether it is you, an editor, a friend *etc.*
- You want to learn \LaTeX

The screenshot shows the Overleaf web editor interface. The main document area contains the following text:

commit. You can close the Review pane by clicking its name on the toolbar when you're done reviewing for the time being.

Track changes are available on all our [premium plans](#), and can be toggled on or off using the option at the top of the Review pane. Track changes allow you to keep track of every change made to the document, along with the person making the change.

How to add Lists

You can make lists with automatic numbering ...

1. Like this,
2. and like this.

...or bullet points ...

- Like this,
- and like this.

How to write Mathematics

\LaTeX is great at typesetting mathematics. Let X_1, X_2, \dots, X_n be a sequence of independent and identically distributed random variables with $E[X_i] = \mu$ and $\text{Var}[X_i] = \sigma^2 < \infty$, and let

$$S_n = \frac{X_1 + X_2 + \dots + X_n}{n} = \frac{1}{n} \sum_{i=1}^n X_i$$

denote their mean. Then as n approaches infinity, the random variables $\sqrt{n}(S_n - \mu)$ converge in distribution to a normal $\mathcal{N}(0, \sigma^2)$.

How to change the margins and paper size

Usually the template you're using will have the page margins and paper size set correctly for that use-case. For example, if you're using a journal article template provided by the journal publisher, that template will be formatted according to their requirements. In these cases, it's best not to alter the margins directly.

The sidebar on the right contains navigation icons and a table of contents with the following items:

- 2.5 How to add Lists
- 2.6 How to write Mathematics
- 2.7 How to change the margins
- 2.8 How to change the document language

Rich Text

- This used CodeMirror 5
- Introduced previews of maths and figures
- Some amount of code hiding
- But it didn't integrate well with Source and the Review features
- Core principle was to ensure code is always accessible

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If we think of this motion as a point moving around a spherically symmetric potential, like a marble in a bowl, then it is clear that this system is now stable to perturbations in the instanton's size. A small initial velocity for ρ sets up an oscillation around the initial value of ρ , but it will not increase indefinitely. The upper and lower bounds of the oscillation are proportional to the initial perturbation.

Generally, the dyonic instanton will oscillate in size with an amplitude, A . [\[Peeters:2001np\]](#)

$$\rho = \sqrt{A \sin(2|q|(t + t_0)) + \sqrt{t^2 + A^2}}.$$

The smaller the initial angular velocity, the less angular momentum the instanton has and the closer it comes to zero size. The larger the initial change in size, the larger the amplitude of the oscillation and again the closer it will come to zero size. The instanton can oscillate out to arbitrary size for a sufficiently large initial $\dot{\rho}$ but will always turn around before reaching $\rho = 0$ for non-zero angular momentum.

{Dyonic instanton scattering} [\[sec:dyonic instanton scattering\]](#)

The presence of a potential in the effective action for dyonic instantons has a significant effect on their scattering behaviour. In this section we will explore how dyonic instantons behave during head-on collisions and with a non-zero impact parameter. The right angled scattering behaviour of instantons is replaced with a more complex dependence on the potential.

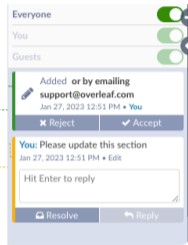
Visual Editor

- Migrated to CodeMirror 6 (for both editors)
- Feature sharing more easily done such as Advanced Reference Search and Tracked changes
- Gave access to themes, keybindings and the same auto-complete
- Code editor with decorations
- Element-by-element design approach to improving the experience

If you have a question while using this template on Overleaf, please use the help menu ("??") on the top bar to search for help or ask us a question using our [contact form](#) or by emailing support@overleaf.com.

Corresponding author

We require manuscripts to identify a single corresponding author. The corresponding author typically is the person who submits the manuscript and

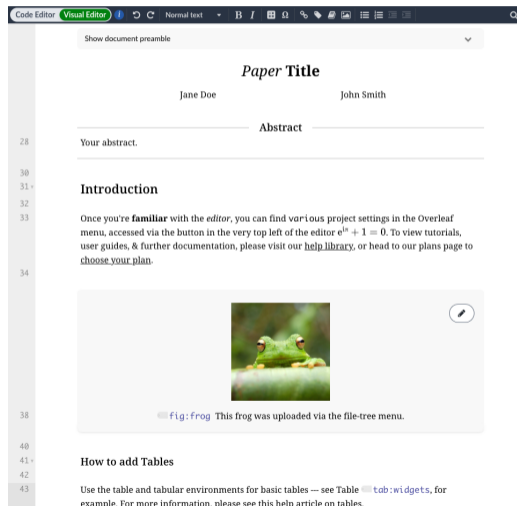


Demo

The image displays two side-by-side screenshots of the Overleaf online LaTeX editor interface. The left screenshot shows the 'Visual Editor' view, where a document titled 'Paper Title' is being edited. The document content includes authors 'Jane Doe' and 'John Smith', an abstract section, and an introduction section. A line of code is visible at the bottom: `\fig{frog}` This frog was uploaded via the file-tree menu. The right screenshot shows the 'Source' view of the same document, displaying the underlying LaTeX code. The code includes a title block, an abstract, an introduction section, and a figure environment containing the `\fig{frog}` command. The interface includes a top navigation bar with 'Menu', 'Review', 'Share', 'Submit', 'History', 'Layers', and 'Chat'. A left sidebar shows a file tree with 'frog.jpg', 'main.tex', and 'sample.bib'. A vertical line of numbers on the left side of the editor indicates line numbers from 28 to 41.

Things to think about

- Can we handle more variety efficiently?
- How much code should be hidden?
- What conventions/styles should we use?
- WYSIWYG conditioning
- Sharing behaviours/features across the editors



The screenshot shows the Overleaf Visual Editor interface. The top toolbar includes options for 'Code Editor' and 'Visual Editor', along with standard editing tools like undo, redo, bold, italic, and link. The document content is displayed in a preview mode with a light gray background. At the top, there is a dropdown menu labeled 'Show document preamble'. Below it, the document title 'Paper Title' is centered. The authors 'Jane Doe' and 'John Smith' are listed on either side. A horizontal line separates the header from the 'Abstract' section, which contains the text 'Your abstract.'. Another horizontal line follows. The 'Introduction' section begins with the text: 'Once you're familiar with the editor, you can find various project settings in the Overleaf menu, accessed via the button in the very top left of the editor $e^{ln} + 1 = 0$. To view tutorials, user guides, & further documentation, please visit our [help library](#), or head to our plans page to [choose your plan](#).' Below the text is a figure showing a green tree frog on a lily pad, with a caption 'fig:frog This frog was uploaded via the file-tree menu.' and an edit icon. The bottom section is titled 'How to add Tables' and contains the text: 'Use the table and tabular environments for basic tables — see [Table tab:widgets](#), for example. For more information, please see this help article on [tables](#).'

Takeaways

- Providing parity to different code editors (CM6, CM5, Ace) is difficult
- Just because we know how we would write the \LaTeX doesn't mean we know what the 'button' should do
- Providing different interfaces enhances user experience

Thank you for listening!

Any questions?

