

ARTICLE TYPE

# Cambridge Data/Maths Template Class File

Author Name1<sup>1</sup>, Author Name2<sup>2</sup> and Author Name3<sup>2</sup>

<sup>1</sup>Division, Organization, City, Pincode, State, Country.

<sup>2</sup>Division, Organization, City, Pincode, State, Country. E-mail: [name2@email.com](mailto:name2@email.com).

**Keywords:** keyword1, keyword2, keyword3, keyword4

**MSC Codes:** *Primary* – CODE1; *Secondary* – CODE2, CODE3

## Abstract

Abstracts should be 250 words. It must be able to stand alone and so cannot contain citations to the paper’s references, equations, etc. An abstract must consist of a single paragraph and be concise. Because of online formatting, abstracts must appear as plain as possible.

## Impact Statement

Some Data journals (DAP, DCE) require an ‘Impact Statement’ section. Comment out this section if it is not required.

## Contents

<b>1</b>	<b>Insert A head here</b>	<b>1</b>
1.1	Insert B head here . . . . .	2
1.1.1	Insert C head here . . . . .	2
<b>2</b>	<b>Insert A head here</b>	<b>3</b>
2.1	Insert B head here . . . . .	3
2.1.1	Insert C head here . . . . .	3
<b>3</b>	<b>Equations</b>	<b>3</b>
<b>4</b>	<b>Figures</b>	<b>3</b>
<b>5</b>	<b>Tables</b>	<b>3</b>
<b>6</b>	<b>Cross referencing</b>	<b>4</b>
<b>7</b>	<b>Lists</b>	<b>5</b>
<b>A</b>	<b>Appendix. Title for Appendix Section</b>	<b>5</b>
<b>B</b>	<b>Conclusion</b>	<b>5</b>

## 1. Insert A head here

This demo file is intended to serve as a “starter file”. It is for preparing manuscript submission only, not for preparing camera-ready versions of manuscripts. Manuscripts will be typeset for publication by the journal, after they have been accepted.

By default, this template uses `bibtex` and adopts the AMS referencing style. However, the journal you’re submitting to may require a different reference style; specify the journal you’re using with the class’ `journal` option — see lines 1–19 of *Sample.tex* for a list of options and instructions for selecting the journal.

Overleaf will run `pdflatex` and `bibtex` automatically as needed. But if you had *first* compiled using another journal option that adopts `biblatex`, and *then* change the journal option to one that adopts `BibTeX`, you may get some compile error messages instead. In this case you will need to do a ‘Recompile from scratch’; see [https://www.overleaf.com/learn/how-to/Clearing\\_the\\_cache](https://www.overleaf.com/learn/how-to/Clearing_the_cache).

On a local  $\text{\LaTeX}$  installation, you would need to run these steps instead:

1. Delete `sample.aux`, `sample.bbl` if these files from a previous compile using `biber` still exist.
2. `pdflatex sample`
3. `bibtex sample`
4. `pdflatex sample`
5. `pdflatex sample`

Some journals e.g. `journal=wet` require `biblatex`. For such journals, you will need to

- uncomment the existing `\addbibresource{example.bib}`;
- change the existing `\bibliography{example}` to be `\printbibliography` instead.

If you are submitting to a journal that uses `biblatex` and using this template on Overleaf, Overleaf’s build tool will automatically run `pdflatex` and `biber`. If you are compiling this template on your own local  $\text{\LaTeX}$  installation, please execute the following commands:

1. `pdflatex sample`
2. `biber sample`
3. `pdflatex sample`
4. `pdflatex sample`

### ***1.1. Insert B head here***

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

#### ***1.1.1. Insert C head here***

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

#### ***Insert D head here***

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetur adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

## 2. Insert A head here

### 2.1. Insert B head here

#### 2.1.1. Insert C head here

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetur adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.<sup>1</sup>

## 3. Equations

Equations in  $\LaTeX$  can either be inline or on-a-line by itself. For inline equations use the  $\dots$  commands. Eg: The equation  $H\psi = E\psi$  is written via the command  $H\psi = E\psi$ .

For on-a-line by itself equations (with auto generated equation numbers) one can use the equation or eqnarray environments  $D$ .

$$\mathcal{L} = i\psi\gamma^\mu D_\mu\psi - \frac{1}{4}F_{\mu\nu}^a F^{a\mu\nu} - m\psi\psi \quad (3.1)$$

where,

$$\begin{aligned} D_\mu &= \partial_\mu - ig \frac{\lambda^a}{2} A_\mu^a \\ F_{\mu\nu}^a &= \partial_\mu A_\nu^a - \partial_\nu A_\mu^a + gf^{abc} A_\mu^b A_\nu^c \end{aligned} \quad (3.2)$$

Notice the use of `\nonumber` in the align environment at the end of each line, except the last, so as not to produce equation numbers on lines where no equation numbers are required. The `\label{}` command should only be used at the last line of an align environment where `\nonumber` is not used.

$$Y_\infty = \left(\frac{m}{\text{GeV}}\right)^{-3} \left[ 1 + \frac{3 \ln(m/\text{GeV})}{15} + \frac{\ln(c_2/5)}{15} \right] \quad (3.3)$$

The class file also supports the use of `\mathbb{}`, `\mathscr{}` and `\mathcal{}` commands. As such `\mathbb{R}`, `\mathscr{R}` and `\mathcal{R}` produces  $\mathbb{R}$ ,  $\mathscr{R}$  and  $\mathcal{R}$  respectively.

## 4. Figures

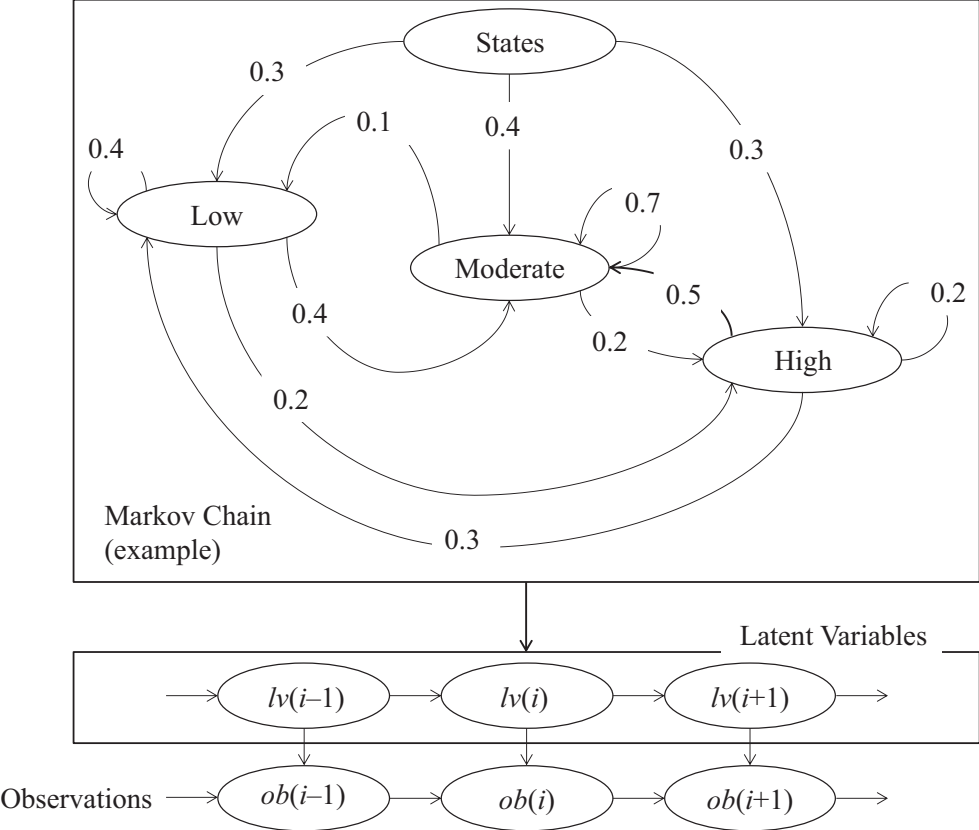
As per the  $\LaTeX$  standards eps images in latex and pdf/jpg/png images in pdf $\LaTeX$  should be used. This is one of the major differences between latex and pdf $\LaTeX$ . The images should be single page documents. The command for inserting images for latex and pdf $\LaTeX$  can be generalized. The package that should be used is the graphicx package.

## 5. Tables

Tables can be inserted via the normal table and tabular environment. To put footnotes inside tables one has to use the additional “fntable” environment enclosing the tabular environment. The footnote appears just below the table itself.

---

<sup>1</sup> This is sample for footnote this is sample for footnote this is sample for footnote this is sample for footnote this is sample for footnote.



**Figure 1.** This is a widefig. This is an example of long caption this is an example of long caption this is an example of long caption this is an example of long caption.

**Table 1.** Tables which are too long to fit, should be written using the “table\*” environment as shown here.

Projectile	Element 1			Element 2 <sup>1</sup>		
	Energy	$\sigma_{calc}$	$\sigma_{expt}$	Energy	$\sigma_{calc}$	$\sigma_{expt}$
Element 3	990 A	1168	1547 ± 12	780 A	1166	1239 ± 100
Element 4	500 A	961	922 ± 10	900 A	1268	1092 ± 40

Note: This is an example of table footnote this is an example of table footnote this is an example of table footnote this is an example of table footnote this is an example of table footnote

<sup>1</sup>This is an example of table footnote

## 6. Cross referencing

Environments such as figure, table, equation, align can have a label declared via the `\label{#label}` command. For figures and table environments one should use the `\label{}` command inside or just below the `\caption{}` command. One can then use the `\ref{#label}` command to cross-reference them. As an example, consider the label declared for Figure 1 which is `\label{fig1}`. To cross-reference it, use the command `Figure \ref{fig1}`, for which it comes up as “Figure 1”. The reference citations should used as per the “natbib” packages. Some sample citations: [2, 5, 3, 1, 4].

## 7. Lists

List in  $\LaTeX$  can be of three types: enumerate, itemize and description. In each environments, new entry is added via the `\item` command. Enumerate creates numbered lists, itemize creates bulleted lists and description creates description lists.

1. First item in the number list.
2. Second item in the number list.
3. Third item in the number list.

List in  $\LaTeX$  can be of three types: enumerate, itemize and description. In each environments, new entry is added via the `\item` command.

- First item in the bullet list.
- Second item in the bullet list.
- Third item in the bullet list.

## A. Appendix. Title for Appendix Section

Appendix text here.

## B. Conclusion

Some Conclusions here.

**Acknowledgments.** We are grateful for the technical assistance of A. Author.

**Funding Statement.** This research was supported by grants from the `<funder-name><doi>(<award ID>); <funder-name><doi>(<award ID>).`

**Competing Interests.** A statement about any financial, professional, contractual or personal relationships or situations that could be perceived to impact the presentation of the work — or ‘None’ if none exist

**Data Availability Statement.** A statement about how to access data, code and other materials allowing users to understand, verify and replicate findings — e.g. Replication data and code can be found in Harvard Dataverse: `\url{https://doi.org/link}`.

**Ethical Standards.** The research meets all ethical guidelines, including adherence to the legal requirements of the study country.

**Author Contributions.** Please provide an author contributions statement using the CRediT taxonomy roles as a guide `\url{https://www.casrai.org/credit.html}`. Conceptualization: A.A; A.B. Methodology: A.A; A.B. Data curation: A.C. Data visualisation: A.C. Writing original draft: A.A; A.B. All authors approved the final submitted draft.

## References

By default, this template uses `bibtex` and adopts the AMS referencing style. However, the journal you’re submitting to may require a different reference style; specify the journal you’re using with the class’ `journal` option — see lines 1–19 of *sample.tex* for a list of options and instructions for selecting the journal.

- [1] Donald E. Knuth, *Literate programming*, The Computer Journal **27** (1984), no. 2, 97–111.
- [2] ———, *The  $T_{\text{E}}X$  book*, Addison-Wesley Professional, 1986.
- [3] Leslie Lamport,  *$\LaTeX$ : a document preparation system*, 2 ed., Addison Wesley, Massachusetts, 1994.
- [4] Michael Lesk and Brian Kernighan, *Computer typesetting of technical journals on UNIX*, Proceedings of American Federation of Information Processing Societies: 1977 National Computer Conference (Dallas, Texas), 1977, pp. 879–888.
- [5] Frank Mittelbach, Michel Gossens, Johannes Braams, David Carlisle, and Chris Rowley, *The  $\LaTeX$  companion*, 2 ed., Addison-Wesley Professional, 2004.