

This paper with a long title discusses the iconic equation

$$E = mc^2$$

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Abstract: The abstract should summarise the context, content and conclusions of the paper. It should not contain any references or displayed equations.

Long abstracts should be broken into paragraphs to improve readability.

Keywords: Template, Styles

1 Files included

1. `neophysics-template.tex` generates this pdf file.
2. `neophysics.cls` the latex class file based on the article class.
3. `mybib.bib` an example bibliography file
4. `flexipage.sty` a package to define page layouts, normally downloaded automatically from CTAN or one of its mirrors.
5. `fnlf1.eps` the CC BY-NC-BD picture on the bottom of this page

Overleaf requires all files in the root project directory.

2 Introduction

Contributions to *Harbingers of Neophysics* are to be in English.

Why this odd page size? Neophysics.org is designed as a mobile friendly website. That means fonts on the webpage are larger (also useful for tired eyes) Reading PDF files on a mobile's smallish screen, a one-inch margin on the standard A4 or Letter size paper shrinks the text with useless white margins on the edge of the screen. Here, one page's content is nearly equivalent to one column of a typical two column journal article.

Furthermore, in preparation of future paper publishing, we have decided on the near universal standard of 6x9 inch format. This page is 5.2x8.4 inch with

narrow margins. Printing this page centrally on a 6x9 page the margins required by printers are established. The printed proceeding's page numbers are easily added into the outer footer in the compiling process.

Typography sample:

```
\textrm The quick brown fox jumped over the lazy dog
\emph The quick brown fox jumped over the lazy dog
\textit The quick brown fox jumped over the lazy dog
\textsl The quick brown fox jumped over the lazy dog
\textsf The quick brown fox jumped over the lazy dog
\texttt The quick brown fox jumped over the lazy dog
\ie \le \eg \Eg \etc renders i.e. I.e. e.g. E.g. etc.
```

3 Document meta data

```
\title[Short Title]{Long Title}
% Long Title used on first page, Short Title on page headers
\author[Short Author]{Long Author}
% Long Author used on first page, Short Author on page headers
% Short xxxx defaults to Long xxxx if omitted
\copyrightauthor{Author} % if omitted = The Above Authors
\address{xxxxxxxx\xxxxxxxx}
\contactemail{demo@example.org}
\date{September 10, 2022} % or comment out for compile date
\keywords{Keyword One, Keyword Two}
\NeophysicsRef{54321} % get this number on neophysics.org
```

PART 1: GENERAL APPEARANCE

Part headings if required: `\part{Part 1: General Appearance}`. These are not numbered by latex and the command `\appendix` first calls `\part{Appendix}`

4 Major section headings with equation $E = mc^2$

Equations in headings need to be bolder. The bold math package `bm` is loaded, but using `\bm{E=mc^2}` interferes with the package `hyperref`. This problem is solved by a new command `\bmtitle`, the above heading is coded:

```
\section{Major section headings with equation  $\bmtitle{E=mc^2}$ }
```

4.1 Subsection headings $E = mc^2$ vs. $E = mc^2$

In subsection headings math you may prefer math symbols in upright font to stand out from the heading which is in italics.

```
 $\mathbf{E=mc^2}$  vs.  $\bmtitle{E=mc^2}$ 
```

4.1.1 Sub-subsection headings $E = mc^2$ vs. $E = mc^2$

Similarly $\mathrm{E=mc^2}$ vs. $\{E=mc^2\}$ Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

Paragraph Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

SubParagraph Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

4.2 Lists of items

Good use is made of the package enumerate

- item one,
- item two.

Items may also be numbered in lowercase Roman numerals:

- i item one
- ii item two
 - a. Lists within lists can be numbered with lowercase Roman letters,
 - b. second item.

5 Equations

Displayed equations should be numbered consecutively in the paper

$$\mu(n, t) = \sum_{i=1}^{\infty} 1(d_i < t, N(d_i) = n) \int_{\sigma=0}^{t^{2^2}} 1(N(\sigma) = n^{2^2}) d\sigma. \tag{1}$$

Equations should be referred to in abbreviated form, e.g. “Eq. (1)” or “(2)”. Equations are left aligned but indented.

6 Theorems

You could load `amsthm` but preferably initialise the theorem environments by either `\plainTheoremNumbers` or `\sectionTheoremNumbers`

Theorem 1: *Theorems, lemmas, etc. are to be numbered consecutively in the paper.*

Proof: Proofs automatically end with □

Comment: The theorem environment behaves similar to equations:
`\begin{comment*}` and with the asterisk `*` numbering is suppressed.
The following theorem like environments are provided: theorem, lemma, proposition, corollary, assertion, axiom, observation, algorithm, answer, assumption, comment, definition, example, remark, and solution.

Theorem environments can be extended by including the lines:
`\newtheorem{myopinion}{My Opinion}%[section]`
`\newcommand\myopinionbodyfont{\upshape}`
in your preamble, to give

My Opinion 1: Is anyone really interested in it?

7 Tables

Tables should be inserted in the text as close to the point of reference as possible. Some space should be left above and below the table.

Table 1: Comparison of acoustic for frequencies for piston-cylinder problem.

Piston mass	Analytical frequency (Rad/s)	TRIA6-S ₁ model (Rad/s)	% Error
1.0	281.0	280.81	0.07
0.1	876.0	875.74	0.03
0.01	2441.0	2441.0	0.0
0.001	4130.0	4129.3	0.16

Note: Table notes
^aTable footnote A If tables need to extend over to a second page, the continuation of the table should be preceded by a caption,
^bTable footnote B

8 Landscape pages

`\begin{landscape}`
The landscape environment issues a new page command, and everything within the environment is rendered in landscape mode.
`\end{landscape}`

9 Illustrations and Photographs

Figures are to be inserted in the text nearest their first reference.

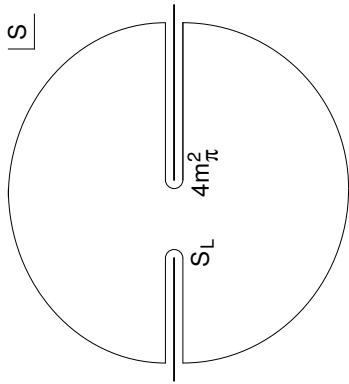


Figure 1: A schematic illustration of dissociative recombination. The direct mechanism, $4m_\pi^2$ is initiated when the molecular ion S_L captures an electron with kinetic energy.

10 Citations

The list of references cited appears before the appendix. Towne [1] studied waves, Thomson [2] discovered the electron and Adams [3] knew the answer to be 42.

Acknowledgements

This section should come before the References. Funding information may also be included here.

References

- [1] Dudley H. Towne. *Wave phenomena*. New York: Dover Publications, 1988.
- [2] J. J. Thomson. “XL. Cathode Rays”. In: *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science* 44.269 (1897), pp. 293–316.
- [3] Douglas Adams. *The hitchhiker’s guide to the galaxy*. New York: Harmony Books, 1989.

APPENDIX

A Appendices

Appendices should be used only when absolutely necessary. They should come after the References. If there is more than one appendix, number them alphabetically. Number displayed equations occurring in the Appendix in this way, e.g. (A.1), (A.2), etc.

$$\mu(n, t) = \sum_{i=1}^{\infty} 1(d_i < t, N(d_i) = n) \int_{\sigma=0}^t 1(N(\sigma) = n) d\sigma. \quad (\text{A.1})$$