

Contents

<b>1</b>	<b>General Guidance</b>	<b>2</b>
1.1	Figure numbering . . . . .	2
1.2	Dates and numbers . . . . .	2
1.3	Punctuation . . . . .	2
1.4	Abbreviations . . . . .	2
<b>2</b>	<b>Specific words and terms</b>	<b>3</b>
<b>3</b>	<b>Math and notation</b>	<b>5</b>
3.1	Cross-sections . . . . .	5
3.2	Matrices . . . . .	5
3.3	Vectors . . . . .	5
<b>4</b>	<b>Other L<sup>A</sup>T<sub>E</sub>X specific items</b>	<b>6</b>
4.1	Figures . . . . .	6
4.2	Package settings . . . . .	6
4.3	Programming language names . . . . .	6
4.4	References and citations . . . . .	6
4.5	Spacing . . . . .	7

# 1 General Guidance

## 1.1 Figure numbering

Tables, Figures and Captions (see Sec. 4 for formatting properly in L<sup>A</sup>T<sub>E</sub>X).

In Eq. (13), (14), and (16)

In Fig. 4(a)

In Ref. 5

Place the caption under figures and images and above tables.

## 1.2 Dates and numbers

02 February 2016 (no commas)

four or fewer numbers closed up:

1200

24.0032 cm

Five or more digits, spaces instead of commas:

12 000

24.077 89 cm

one through ten

11,12 and above

2x2 matrix (numerals)

0.03 and 106.0 (no “naked” decimal points)

6 V (number before units are always numerals)

1D, 2D, 3D

## 1.3 Punctuation

en-dash: Paris–London train, (1950–), University of Wisconsin–Madison

serial commas (a, b, and c)

hyphenate multi-word modifiers: macro-time

parenthesis:

inserted into another sentence, no period (such as this).

isolated, period inside. (Such as this.)

pairs surrounded letters in innumeration list (a) and (b)

possessives: Smith and Green’s theory

plurals:

1950s

x’s, K’s

quotation marks after commas and periods, before colons and semi-colons

in general, place “e.g.” and “i.e.” in parenthesis, not commas and include a comma after (e.g., like this).

## 1.4 Abbreviations

Plural add ’s: LCAO’s

## 2 Specific words and terms

### A

$\alpha$  particle  
*ad hoc*  
*à la*  
 anti-compounds closed (antilogarithm)

### B

burnup (n)

### C

Cartesian  
 collision-flux estimator  
 cross-section (n)  
 cross term

### D

delta-tracking  
 Doppler  
 downscatter

### E

eigenfunction  
 eigenvalue

### F

Fourier transform/analysis/spectra

### G

Gauss-Seidel (adj)

### H

half-compound hyphenated:  
     half-life  
 halfway

### I

indexes (to book)  
 indices (to variable)  
*in situ*

### J

### K

### L

Laplacian  
 l.h.s.  
 lifetime

### M

Maxwell(ian)  
 midpoint  
 modeling  
 multigroup  
 multivariant

### N

non-compound closed:  
     nonelastic  
     nonradioactive  
     *but* proper noun, symbol, numeral:  
     non-Fermi  
     12-fold

### O

### P

path length

### Q

### R

radioactive  
 ray tracing  
 r.h.s.  
 runtime

### S

setup  
 self-compound hyphenated:  
     self-shielded (adj)  
 semiempirical  
 semi-infinite

**T**

track length

track-length estimator

**U**

upscatter

uranium

**V****W**

waveheight

wavelength

**X**

x ray (n)

x-ray (adj)

**Y****Z**

## 3 Math and notation

### 3.1 Cross-sections

Macroscopic cross-sections are used so infrequently in neutronics that reserving the use of capital sigma,  $\Sigma$ , is inefficient. Use the following notation to differentiate between the two:

macroscopic:  $\tilde{\sigma}$

microscopic:  $\sigma$

### 3.2 Matrices

Bold capital letters, **A**.

Use brackets (`bmatrix`) for normal matrix, pipes (`vmatrix`) for determinants, and double pipes (`Vmatrix`) for a matrix norm.

### 3.3 Vectors

Topped with an arrow,  $\vec{\phi}$ . Vector superscripts must be shifted slightly using `\vec{\phi}^{\ell}`. For comparison:

$$\begin{array}{ll} \vec{\phi}^{\ell} & : \vec{\phi}^{\ell} \\ \phi^{\ell} & : \phi^{\ell} \end{array}$$

Use hats to denote unit vectors,  $\hat{\Omega}$ .

In general, if a vector is made up of other vectors, use a capital letter for the larger vector, and lowercase for the smaller vectors.

$$\vec{\Phi} = \begin{bmatrix} \vec{\phi}_0 \\ \vec{\phi}_1 \end{bmatrix}$$

## 4 Other L<sup>A</sup>T<sub>E</sub>X specific items

### 4.1 Figures

Place the `\label{}` for figures inside the caption to ensure correct references:

```
\caption{This is the caption.\label{fig:ref}}
```

### 4.2 Package settings

Always hide boxes from hyperref package:

```
\usepackage[hidelinks]{hyperref}
```

### 4.3 Programming language names

For the C++ programming language use:

```
\newcommand{\Cpp}[1][\textterm{C\nolinebreak[4]\hspace{-.05em}\raisebox{.4ex}{\tiny\bf ++}\#1}]
```

This greatly improves the look of the name:

C++17	C++
\Cpp{17}	C++17

### 4.4 References and citations

For equations, use the amsmath `\eqref{label}` function.

$$E = mc^2 \tag{1}$$

This correctly formats Eq. `\eqref{eq:relativity}` as Eq. (1).

Use Sec. `\ref{sec:latex}` for sections, which correctly formats as Sec. 4.

For figures, use Fig. `\ref{fig:image}`, which correctly formats as Fig. 1.

For subfigures, include the packages and commands:

```
\usepackage{caption, subcaption}
\renewcommand\thesubfigure{(\alph{subfigure})}
\captionsetup[sub]{labelformat=simple}
```

and reference the subfigure itself, which will format correctly as Fig. 1(a). See documentation for these packages if needed.

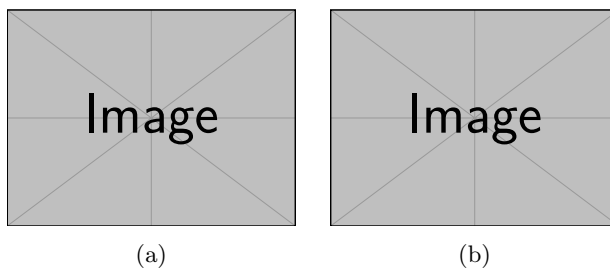


Figure 1: Subfigure with parts (a) and (b).

## 4.5 Spacing

For abbreviations use `.\` or `.\~` if a tie is needed (titles or other words that should not be separated).

Normal	e.g. this example; seen in Fig. 1
Proper	e.g. this example; seen in Fig. 1

Note: the bibliography handles this correctly already.

Specify interspace spacing, `\@.` if a capital letter ends a sentence:

Normal	The code is called BART. As you can see.
Proper	The code is called BART. As you can see.