

# LaTeX Style Guide for the *Journal of Integer Sequences*

Version 1.9

Most authors of papers in *Journal of Integer Sequences* prepare their papers in LaTeX. Please observe the following guidelines.

## 1 LaTeX advice

Please avoid the use of special-purpose macros whenever possible. Strip your paper of references to any packages that you do not actually use. (Do not just comment them out.)

It may be worthwhile to download the latex file for a paper already published in the journal and model your paper on it.

Do not include a date in your paper.

Acknowledgments should be in a separate section at the end of the paper.

## 2 Common Grammatical Errors

1. Avoid the passive voice. Instead of saying “In [1] it is shown that all primes  $> 2$  are odd”, say “Smith [1] showed that all primes  $> 2$  are odd”.
2. Avoid use of weak constructions such as “this number”. For example, instead of saying  
Wrong: Let  $x$  be a prime. We now square this number.  
Right: Let  $x$  be a prime. We now square  $x$ .
3. Avoid the use of constructions, such as “don’t”, “can’t”, “isn’t”, etc.  
Wrong: The number 7 is prime, since it isn’t divisible by 2, 3, 4, 5, or 6.  
Right: The number 7 is prime, since it is not divisible by 2, 3, 4, 5, or 6.
4. The word “precise” is not a verb in English.  
Wrong: We now precise the connection between  $\alpha$  and  $\beta$ .  
Right: We now make the connection between  $\alpha$  and  $\beta$  more precise.

5. Use the word “expansion”, not “development”.  
 Wrong: Let  $[a_0, a_1, \dots]$  be the continued fraction development of  $x$ .  
 Right: Let  $[a_0, a_1, \dots]$  be the continued fraction expansion of  $x$ .
6. Use “associate with”, not “associate to”.  
 Wrong: We now associate  $x$  to  $y$ .  
 Right: We now associate  $x$  with  $y$ .
7. Use “root” for equations, and “zero” for polynomials.  
 Wrong: Let  $\alpha$  be the positive root of  $x^2 - x - 1$ .  
 Right: Let  $\alpha$  be the positive zero of  $x^2 - x - 1$ .  
 Right: Let  $\alpha$  be the positive root of  $x^2 - x - 1 = 0$ .
8. Use the term “pair”, not “couple”, to denote two objects.  
 Wrong: Let  $(\alpha, \beta)$  be a couple of real numbers.  
 Right: Let  $(\alpha, \beta)$  be a pair of real numbers.
9. Always put a comma after “i.e.” and “e.g.”.  
 Wrong: Let  $x$  be a minimal element i.e. an element such that if  $y \leq x$  then  $y = x$ .  
 Wrong: Let  $x$  be a prime e.g. 2.  
 Right: Let  $x$  be a minimal element, i.e., an element such that if  $y \leq x$  then  $y = x$ .  
 Right: Let  $x$  be a prime, e.g., 2.
10. Avoid run-on sentences. A run-on sentence is one that expresses two thoughts in a single phrase. Fix by separating into two or more sentences, or by connecting with a semi-colon or a conjunction such as “and”.  
 Wrong: Let  $\Sigma$  be a finite alphabet,  $\Sigma^*$  denote the set of all finite words over  $\Sigma$ .  
 Right: Let  $\Sigma$  be a finite alphabet, and let  $\Sigma^*$  denote the set of all finite words over  $\Sigma$ .  
 Wrong: Let  $p$  be a prime number  $\geq 3$ , then  $2^p \equiv 2 \pmod{p}$ .  
 Right: Let  $p$  be a prime number  $\geq 3$ . Then  $2^p \equiv 2 \pmod{p}$ .
11. Avoid starting sentences or phrases with notation.  
 Wrong:  $f$  maps integers to real numbers.  
 Right: The function  $f$  maps integers to real numbers.
12. Avoid treating citation numbers as objects of prepositions. Treat them syntactically like footnotes.  
 Wrong: In [1] it is proved that  $e$  is irrational.

Wrong: The article [1] proves that  $e$  is irrational.

Right: Euler [1] proved that  $e$  is irrational.

13. Use colons properly. Colons should not immediately follow verbs.

Wrong: The resulting equation is:

$$x = y^2.$$

Right: The resulting equation is

$$x = y^2.$$

Right: The resulting equation is as follows:

$$x = y^2.$$

14. Words like “notation” and “information” are mass nouns in English, and as such, rarely appear in the plural.

Wrong: We now introduce some definitions and notations.

Right: We now introduce some definitions and notation.

## 3 Common LaTeX Errors

This section lists a few of the common errors made when preparing papers in LaTeX.

### 3.1 Blackboard Bold

For blackboard bold symbols such as  $\mathbb{Z}$ ,  $\mathbb{Q}$ ,  $\mathbb{R}$ ,  $\mathbb{C}$ , use `\mathbb Z`, for example. You may need to include the command `\usepackage{amssymb}`.

### 3.2 Variables

Usually, variables such as  $x$ ,  $y$ ,  $n$ , etc., should appear in the italic font. This will occur automatically if you remember to enclose your equations (even references to a single variable) in dollar signs or double-dollar signs, or use a `latex equation` environment.

Wrong: Let `n` be the number of integers in the list.

Right: Let  $n$  be the number of integers in the list.

### 3.3 Accents

Be careful to use the proper accents. The name Erdős, for example, uses a Hungarian accent, and should be formatted with `\H`.

### 3.4 Floor and Ceiling

Be sure to use the built-in T<sub>E</sub>X commands `\lfloor`, `\rfloor` and `\lceil`, `\rceil`, not square brackets, when using these integer functions.

### 3.5 Min and Max

Be sure to use the built-in T<sub>E</sub>X commands `\min` and `\max` when using these functions.

### 3.6 Gcd and Lcm

Be sure to use the built-in T<sub>E</sub>X command `\gcd` for greatest common divisor. Don't write  $(a, b)$  for the gcd of  $a$  and  $b$ ; write  $\gcd(a, b)$  instead. For lcm, you will have to define your own command so that it appears in the roman font.

### 3.7 Parentheses

Use parentheses for grouping, not square brackets or braces. You can get different sizes of parentheses using, for example, `\bigl(` and `\bigr)`.

### 3.8 Mod

Draw a distinction between the use of “mod” as a function of two arguments, mapping  $a \bmod b$  to the least non-negative residue of  $a$  modulo  $b$ , and “mod” as an equivalence relation. For the first, use the T<sub>E</sub>X command `\bmod`. For the second, use the T<sub>E</sub>X command `\pmod` for displayed equations; for in-line equations write something like

$$x \equiv a \pmod{b},$$

which typesets as follows:  $x \equiv a \pmod{b}$ .

### 3.9 Quote marks

Do not enclose words in ordinary quotation marks "like this". This results in the following ugly output:

"like this"

Instead, use the left-quote and right-quote symbols, ‘‘like this’’, which gives the correct

“like this” .

### 3.10 Proper use of `\ldots` and `\cdots`

Be sure to use `\ldots` and `\cdots` properly. The rule is as follows: you should use `\ldots` if the center of mass of the items on either side is below the middle of the line — for example, if the items on either side are commas. You should use `\cdots` if the center of mass of the items on either side is in the middle of the line — for example, if the items on either side are alphabet symbols. For example:

Wrong: Consider the product  $a_1 a_2 \ldots a_n$ . (Here we used `\ldots`.)

Right: Consider the product  $a_1 a_2 \cdots a_n$ . (Here we used `\cdots`.)

Wrong: Consider the sequence  $a_1, a_2, \ldots, a_n$ . (Here we used `\cdots`.)

Right: Consider the sequence  $a_1, a_2, \ldots, a_n$ . (Here we used `\ldots`.)

### 3.11 Proper punctuation of case statements

Please punctuate case statements as follows:

$$f(x) = \begin{cases} 1, & \text{if } x \text{ is irrational;} \\ 0, & \text{otherwise.} \end{cases}$$

## 4 Definitions

Terms that are being defined should be in a special font, such as italic or slant.

For example,

A *flern* is a 3-dimensional hypersquare.

Avoid introducing new terms and notation when there are already accepted equivalents widely in use in the mathematical community. For example, for the Fibonacci numbers, you should use the notation  $F_n$ , and the numbers defined by  $F_0 = 0$ ,  $F_1 = 1$ ,  $F_n = F_{n-1} + F_{n-2}$  for  $n \geq 2$ .

## 5 Theorems

Use the `\begin{theorem}` ... and `\end{theorem}` environments for theorems, lemmas, propositions, etc. Theorems should be numbered. Refer to theorems using labels; do *not* hard-code references to them.

To get proper definitions, use the `\usepackage{amsthm}` command.

## 6 Remarks

All remarks should be in the roman font, except (of course) for any mathematical symbols.

## 7 Tables

Tables should be centered on the page, using the `center` environment. Each table should have a number.

## 8 Abstract

Every paper should have a short abstract of 50 to 200 words. The abstract should be free of symbols whenever possible, and should not contain citations to the bibliography. When referring to other work in the abstract, you can refer to author's names, but avoid mentioning years, journal names, or other information.

## 9 Sequence Numbers

Be sure to include sequence numbers from Sloane's online *Encyclopedia of Integer Sequences* for all sequences you discuss in your paper. The list of all such sequences should be summarized at the end of your paper, sorted in ascending order.

## 10 Citations

Use citations syntactically like footnotes, not as objects of prepositions. Avoid saying things like "In [1] we find the following result." Instead, say "Jones [1] proved the following result." Use the LaTeX command `\cite`.

When listing citations, if the author has two initials, be sure place a space between the two initials.

Wrong: N.J.A. Sloane

Right: N. J. A. Sloane

Please use the following examples when preparing citations. Pay careful attention to punctuation and the use of roman, italic, and bold fonts. In particular, notice that page ranges should be separated by two hyphens in LaTeX: write 123--145, not 123-145.

Please use the standard *Mathematical Reviews* abbreviations for journal names, with the exception that for particularly obscure journals you may provide the entire name.

The *Mathematical Reviews* journal abbreviation list can be found here:

<http://www.ams.org/msnhtml/serials.pdf>

### 10.1 Article citation

1. J. Chan and F. E. Smith, An article about Chan-Smith numbers, *J. of Chan-Smith Numbers* **13** (1998), 123–124.

Provide the volume, but **not** the issue number, unless the issue number is required to uniquely specify the paper. Note that words in article titles should not be capitalized, with

the following exceptions: the first word, proper nouns, and German nouns. The journal name should be in italics; the volume number should be in bold. Do not use “pp.” to provide page numbers.

## 10.2 Book citation

2. A. Alces, *Introduction to Moose Theory*, Springer, 1995.

Note that words in book titles should be capitalized, with the exception of very short unimportant words, such as “to”, “of”, “and”, etc. Do not include the ISBN number. It is not necessary to give the place of publication unless it is a very rare or hard-to-find book.

## 10.3 Article in Conference Proceedings or Book

3. B. Franklin, The public library as an aid to research, in G. Washington and T. Jefferson, eds., *Public Libraries in the United States*, Addison-Wesley, 2001, pp. 16–32.

Capitalize the name of the book, but not the paper you are referring to in the book.

## 11 Other Issues

Please be sure that your paper contains a list of *key words and phrases* and the appropriate *2000 Mathematics Subject Classifications*. (A list of all these classifications can be found at <http://www.ams.org/msnhtml/classification.pdf>.)

Avoid starting a line of your file with the word “From”. Many mailers insert a > character in such lines, causing a question mark to appear in your text. If you must start a line of the file with the word “From”, you can insert a space first.