

Common Typos and T_EX-O's in Colloquium Papers

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☹️ "NO", "NO"

"YES" 😊

Use two backquote characters for the opening and two single quote characters for the closing. The backquote ‘ character is by the 1 on the keyboard and the quote ’ is by the enter key. The L^AT_EX code ‘ ‘YES’ ’ means “YES”!

☹️ Dr. Reimann

Dr. Reimann 😊

Use a tie, the tilde character (~), after the period of a title: `Dr.~Reimann`. Without the tie, the title and the name could be split, or the spacing might increase excessively. For example, the two instances of names with a title and no tie, `Dr. Reimann` or `Dr. Reimann`, have odd formatting. A tie treats the period as a normal character rather than the end of a sentence and links the title with the name. Generally you should introduce a person with their highest title at the beginning of your document (`Dr. Reimann` rather than `Mr. Reimann` or `Dave`); subsequently, it is better to just use their last name (`Reimann`) unless that would cause confusion.

☹️ a b c A B C

a b c A B C 😊

Use math mode for proper formatting of variables and mathematical text! Inline mode (`\cdots`) is useful for small expressions. For example, the famous equation $E = mc^2$ is formatted using `$E = mc^2$`. Display mode (`$$\cdots$$`) places mathematical text centered on a separate line; it is useful for larger, complicated, or more important expressions, formula, and equations. For example, the formula involving π from Ramanujan

$$\frac{1}{\pi} = \frac{2\sqrt{2}}{99^2} \sum_{k=0}^{\infty} \frac{(4k)!}{k!^4} \frac{26390k + 1103}{396^{4k}}$$

is formatted better using display mode. In addition to special symbols and spacings, math mode uses a math italic font. One conventional exception to math italics is when vectors are set in a bold font, such as `\bold{v}`.

☹️ $x=1$

$x = 1$ 😊

Put your entire equation in math mode, such as `$x=1$`, not just variables or special symbols! L^AT_EX has special spacing rules for mathematical symbols that give proper formatting.

☹️ axb , $a x b$, $a*b$

ab 😊

Never use ‘`x`’ or ‘`*`’ to represent multiplication in L^AT_EX. In most cases, use juxtaposition, such as `$a b$`, for multiplication. When multiplication of numbers is done, the `\times` operator is preferred: 2×3^4 or 6.022×10^{23} . The `\cdot` should be used for multiplication of units, such as in defining the gravitational constant: $G = 6.674 \times 10^{-11} \text{ m}^3 \cdot \text{kg}^{-1} \cdot \text{s}^{-2}$. The `\cdot` should also be used for vector dot product ($\mathbf{u} \cdot \mathbf{v}$). Avoid using `\cdot` when it could be confused with a decimal point. While most computer languages use ‘`*`’ for multiplication, it has other mathematical meanings and should not be used for multiplication.

☹️ $2x2$, $2*2$

2×2 😊

Use the `\times` operator for ‘by’: (`2×2`). This is useful when specifying the size of a matrix ($m \times n$), for a cross-product ($\mathbf{u} \times \mathbf{v}$), or a Cartesian product of sets ($\mathbb{R} \times \mathbb{R}$).

☹️ `...stuff[1]`. OR `...stuff.[1]`

`...stuff [1]`. 😊

When citing a reference, generally use `stuff~\cite{ref}`. which has the citation inside the sentence; the tie character ~ will avoid a line break before the citation, which looks bad.

☹️ $velocity = \frac{distance}{time}$

$velocity = \frac{distance}{time}$ 😊

When using words in math mode formulas, format the word or phrase using `\text`, such as `\text{velocity}`.

☹️ x axis, x -axis

x -axis 😊

Use math mode: the z -axis (`z-axis`) is perpendicular to the xy -plane (`xy-plane`).

☹️ $\sin\theta$, $\log x$, ...

$\sin\theta$, $\log x$, ... 😊

When using trigonometric, logarithmic, or other special functions, use `\sin`, `\log`, `\gcd`, etc.

☹️ $E = \{x|x\text{is even}\}$ $E = \{x|x \text{ is even}\}$ 😊

When using text in formulas, use `\text` as in the example above. Note you may need to insert some additional space to get results: $\$E = \{x \mid x \text{\texttt{ is even}}\}\$,$ where the space before “is” gives the correct formatting.

☹️ $\lim_{x \rightarrow \infty} \frac{1}{x} = 0$ $\lim_{x \rightarrow \infty} \frac{1}{x} = 0$ 😊

As with special functions, use `\lim` to properly format the limit operator.

☹️ 1-2 1 – 2 😊

For subtraction, like other mathematics, use math mode `\$1-2\!`

☹️ 1-2 1–2 😊

For number ranges use a double dash (`1--2`) .

☹️ ...text - related stuff - more texttext—related stuff—more text... 😊

The *hyphen* is given by a single dash `-` and is used to hyphenate words such as “one-dimensional.” The *en-dash* is given by a two dashes `--` and is used for number ranges such as 1777–1855. The *em-dash* is given by a three dashes `---` and, like parentheses, offsets a group of text from the main flow. No space is used before or after the em-dash.

☹️ $\pi \approx \frac{355}{113}$ $\pi \approx 355/113$ 😊

Normally, one would use `\frac{355}{113}` for a fraction in display math mode (`\$ \$ \cdot \cdot \$`). However, fractions are a challenge to render using inline math mode. It is almost always best to use a slash `\$355/113\$,` which gives 355/113. Another option is to use `\$ \nicefrac{355}{113} \$,` which produces ³⁵⁵/₁₁₃. Note that these options do not change the distance between baselines. Compare these to $\frac{355}{113}$ (`\$ \displaystyle \frac{355}{113} \$`) and $\frac{355}{113}$ (`\$ \frac{355}{113} \$`); these two should be a last resort because they create nonuniform spacings between baselines. Another place to use `/` or `\nicefrac` is in compound fractions, such as $\frac{3x+1}{a/2}$.

☹️ PHD, PH.D., Ph.D. PhD 😊

It is becoming increasingly common to avoid periods in abbreviations of word phrases. The degree of *Doctor of Philosophy* is best abbreviated these days simply as PhD. You might also write “she earned doctorate in mathematics” or “he has a doctoral degree in mathematics”. One who has a master’s degree (sometimes an MA or MS) or a doctoral degree (PhD, MD) is said to have an advanced degree. After you graduating from Albion College your degree will likely be a Bachelor of Arts (BA); other bachelor’s degrees include a Bachelor of Science (BS) and Bachelor of Fine Arts (BFA).

☹️ $S = \left\{ \left(\frac{\lfloor \frac{n^n F_n}{F_{n-1}} \rfloor}{n^n} \right) \text{ for } 1 \leq n < \infty \right\}$ $S = \left\{ \left(\frac{\lfloor \frac{n^n F_n}{F_{n-1}} \rfloor}{n^n} \right) \text{ for } 1 \leq n < \infty \right\}$ 😊

Delimiters can be combined with `\left` and `\right` to produce a delimiter that is automatically tall enough to fit the enclosed text, such as `\$ \left(\frac{355}{113} \right) \$`.

☹️ 3:30 PM, 3:30 pm, 3:30 P.M., 3:30 p.m. 3:30 PM 😊

Small capitals (small caps) have glyphs the same shape and weight as regular capitals, but have a smaller overall size. Use small caps for acronyms or abbreviations to avoid “shouting.” In the indications of time, AM, given by `\sc am`, is an abbreviation of the Latin *ante meridiem* (before midday) and PM is an abbreviation of the Latin *post meridiem* (before midday). This is also useful in dates; for example, “Euclid’s elements were written around 300 BCE.” Of course you can use all capitals when you just need your writing to shout WTF!