



SIG Proceedings Paper in LaTeX Format*

Extended Abstract†

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Figure 1: This is a teaser

*Produces the permission block, and copyright information

†The full version of the author’s guide is available as `acmart.pdf` document

‡Dr. Trovato insisted his name be first.

§The secretary disavows any knowledge of this author’s actions.

¶This author is the one who did all the really hard work.

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WOODSTOCK’97, July 1997, El Paso, Texas USA

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ABSTRACT

This paper provides a sample of a \LaTeX document which conforms, somewhat loosely, to the formatting guidelines for ACM SIG Proceedings.

CCS CONCEPTS

• **Computer systems organization** → **Embedded systems**; *Redundancy*; Robotics; • **Networks** → Network reliability;

KEYWORDS

ACM proceedings, \LaTeX , text tagging

ACM Reference format:

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107 *ACM Woodstock conference, El Paso, Texas USA, July 1997 (WOOD-*
 108 *STOCK'97)*, 6 pages.
 109 https://doi.org/10.475/123_4

111 1 INTRODUCTION

113 The *proceedings* are the records of a conference.¹ ACM seeks
 114 to give these conference by-products a uniform, high-quality
 115 appearance. To do this, ACM has some rigid requirements for
 116 the format of the proceedings documents: there is a specified
 117 format (balanced double columns), a specified set of fonts
 118 (Arial or Helvetica and Times Roman) in certain specified
 119 sizes, a specified live area, centered on the page, specified
 120 size of margins, specified column width and gutter size.

122 2 THE BODY OF THE PAPER

123 Typically, the body of a paper is organized into a hierarchi-
 124 cal structure, with numbered or unnumbered headings for
 125 sections, subsections, sub-subsections, and even smaller sec-
 126 tions. The command `\section` that precedes this paragraph
 127 is part of such a hierarchy.² \LaTeX handles the numbering
 128 and placement of these headings for you, when you use
 129 the appropriate heading commands around the titles of the
 130 headings. If you want a sub-subsection or smaller part to
 131 be unnumbered in your output, simply append an asterisk
 132 to the command name. Examples of both numbered and un-
 133 numbered headings will appear throughout the balance of
 134 this sample document.

135 Because the entire article is contained in the **document**
 136 environment, you can indicate the start of a new paragraph
 137 with a blank line in your input file; that is why this sentence
 138 forms a separate paragraph.

140 Type Changes and *Special Characters*

141 We have already seen several typeface changes in this sam-
 142 ple. You can indicate italicized words or phrases in your text
 143 with the command `\textit`; emboldening with the com-
 144 mand `\textbf` and typewriter-style (for instance, for com-
 145 puter code) with `\texttt`. But remember, you do not have
 146 to indicate typestyle changes when such changes are part
 147 of the *structural* elements of your article; for instance, the
 148 heading of this subsection will be in a sans serif³ typeface,
 149 but that is handled by the document class file. Take care with
 150 the use of⁴ the curly braces in typeface changes; they mark
 151 the beginning and end of the text that is to be in the different
 152 typeface.

154 ¹This is a footnote

155 ²This is a footnote.

156 ³Another footnote here. Let's make this a rather long one to see how it
 157 looks.

158 ⁴Another footnote.

160 You can use whatever symbols, accented characters, or
 161 non-English characters you need anywhere in your docu-
 162 ment; you can find a complete list of what is available in the
 163 *\LaTeX User's Guide* [26].

164 Math Equations

165 You may want to display math equations in three distinct
 166 styles: inline, numbered or non-numbered display. Each of
 167 the three are discussed in the next sections.

168 *Inline (In-text) Equations.* A formula that appears in the
 169 running text is called an inline or in-text formula. It is pro-
 170 duced by the **math** environment, which can be invoked with
 171 the usual `\begin . . . \end` construction or with the short
 172 form `$. . . $`. You can use any of the symbols and struc-
 173 tures, from α to ω , available in \LaTeX [26]; this section will
 174 simply show a few examples of in-text equations in context.
 175 Notice how this equation: $\lim_{n \rightarrow \infty} x = 0$, set here in in-line
 176 math style, looks slightly different when set in display style.
 177 (See next section).

178 *Display Equations.* A numbered display equation—one set
 179 off by vertical space from the text and centered horizontally—
 180 is produced by the **equation** environment. An unnumbered
 181 display equation is produced by the **displaymath** environ-
 182 ment.

183 Again, in either environment, you can use any of the sym-
 184 bols and structures available in \LaTeX ; this section will just
 185 give a couple of examples of display equations in context.
 186 First, consider the equation, shown as an inline equation
 187 above:

$$\lim_{n \rightarrow \infty} x = 0 \quad (1)$$

188 Notice how it is formatted somewhat differently in the **dis-**
 189 **playmath** environment. Now, we'll enter an unnumbered
 190 equation:

$$\sum_{i=0}^{\infty} x + 1$$

191 and follow it with another numbered equation:

$$\sum_{i=0}^{\infty} x_i = \int_0^{\pi+2} f \quad (2)$$

192 just to demonstrate \LaTeX 's able handling of numbering.

202 Citations

203 Citations to articles [6–8, 19], conference proceedings [8] or
 204 maybe books [26, 34] listed in the Bibliography section of
 205 your article will occur throughout the text of your article.
 206 You should use BibTeX to automatically produce this bibli-
 207 ography; you simply need to insert one of several citation
 208 commands with a key of the item cited in the proper location
 209 in the `.tex` file [26]. The key is a short reference you invent
 210 to uniquely identify each work; in this sample document, the

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key is the first author's surname and a word from the title. This identifying key is included with each item in the .bib file for your article.

The details of the construction of the .bib file are beyond the scope of this sample document, but more information can be found in the *Author's Guide*, and exhaustive details in the *LaTeX User's Guide* by Lamport [26].

This article shows only the plainest form of the citation command, using \cite.

Some examples. A paginated journal article [2], an enumerated journal article [11], a reference to an entire issue [10], a monograph (whole book) [25], a monograph/whole book in a series (see 2a in spec. document) [18], a divisible-book such as an anthology or compilation [13] followed by the same example, however we only output the series if the volume number is given [14] (so Editor00a's series should NOT be present since it has no vol. no.), a chapter in a divisible book [37], a chapter in a divisible book in a series [12], a multi-volume work as book [24], an article in a proceedings (of a conference, symposium, workshop for example) (paginated proceedings article) [4], a proceedings article with all possible elements [36], an example of an enumerated proceedings article [16], an informally published work [17], a doctoral dissertation [9], a master's thesis: [5], an online document / world wide web resource [1, 30, 38], a video game (Case 1) [29] and (Case 2) [28] and [27] and (Case 3) a patent [35], work accepted for publication [31], 'YYYYb'-test for prolific author [32] and [33]. Other cites might contain 'duplicate' DOI and URLs (some SIAM articles) [23]. Boris / Barbara Beeton: multi-volume works as books [21] and [20].

A couple of citations with DOIs: [22, 23].

Online citations: [38-40].

Tables

Because tables cannot be split across pages, the best placement for them is typically the top of the page nearest their initial cite. To ensure this proper "floating" placement of tables, use the environment **table** to enclose the table's contents and the table caption. The contents of the table itself must go in the **tabular** environment, to be aligned properly in rows and columns, with the desired horizontal and vertical rules. Again, detailed instructions on **tabular** material are found in the *LaTeX User's Guide*.

Immediately following this sentence is the point at which Table 1 is included in the input file; compare the placement of the table here with the table in the printed output of this document.

To set a wider table, which takes up the whole width of the page's live area, use the environment **table*** to enclose the table's contents and the table caption. As with a single-column table, this wide table will "float" to a location deemed more desirable. Immediately following this sentence is the

Table 1: Frequency of Special Characters

Non-English or Math	Frequency	Comments
\emptyset	1 in 1,000	For Swedish names
π	1 in 5	Common in math
$\$$	4 in 5	Used in business
Ψ_1^2	1 in 40,000	Unexplained usage



Figure 2: A sample black and white graphic.



Figure 3: A sample black and white graphic that has been resized with the includegraphics command.

point at which Table 2 is included in the input file; again, it is instructive to compare the placement of the table here with the table in the printed output of this document.

It is strongly recommended to use the package booktabs [15] and follow its main principles of typography with respect to tables:

- (1) Never, ever use vertical rules.
- (2) Never use double rules.

It is also a good idea not to overuse horizontal rules.

Figures

Like tables, figures cannot be split across pages; the best placement for them is typically the top or the bottom of the page nearest their initial cite. To ensure this proper "floating" placement of figures, use the environment **figure** to enclose the figure and its caption.

This sample document contains examples of .eps files to be displayable with LaTeX. If you work with pdfLaTeX, use files in the .pdf format. Note that most modern TeX systems will convert .eps to .pdf for you on the fly. More details on each of these are found in the *Author's Guide*.

As was the case with tables, you may want a figure that spans two columns. To do this, and still to ensure proper "floating" placement of tables, use the environment **figure*** to enclose the figure and its caption. And don't forget to end the environment with **figure***, not **figure**!

Table 2: Some Typical Commands

Command	A Number	Comments
<code>\author</code>	100	Author
<code>\table</code>	300	For tables
<code>\table*</code>	400	For wider tables

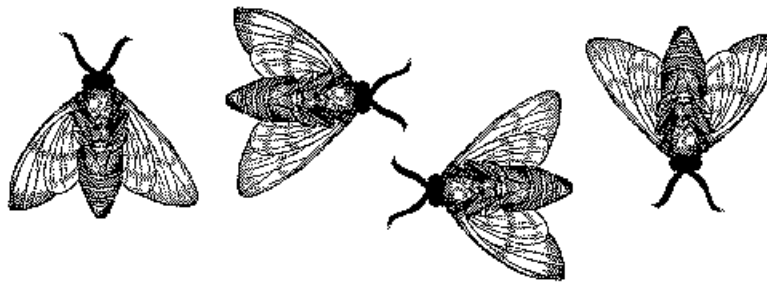


Figure 4: A sample black and white graphic that needs to span two columns of text.

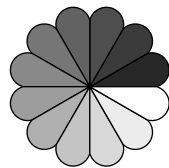


Figure 5: A sample black and white graphic that has been resized with the `includegraphics` command.

Theorem-like Constructs

Other common constructs that may occur in your article are the forms for logical constructs like theorems, axioms, corollaries and proofs. ACM uses two types of these constructs: theorem-like and definition-like.

Here is a theorem:

THEOREM 2.1. *Let f be continuous on $[a, b]$. If G is an anti-derivative for f on $[a, b]$, then*

$$\int_a^b f(t) dt = G(b) - G(a).$$

Here is a definition:

Definition 2.2. If z is irrational, then by e^z we mean the unique number that has logarithm z :

$$\log e^z = z.$$

The pre-defined theorem-like constructs are **theorem**, **conjecture**, **proposition**, **lemma** and **corollary**. The pre-defined definition-like constructs are **example** and **definition**. You can add your own constructs using the `amsthm`

interface [3]. The styles used in the `\theoremstyle` command are **acmplain** and **acmdefinition**.

Another construct is **proof**, for example,

PROOF. Suppose on the contrary there exists a real number L such that

$$\lim_{x \rightarrow \infty} \frac{f(x)}{g(x)} = L.$$

Then

$$l = \lim_{x \rightarrow c} f(x) = \lim_{x \rightarrow c} \left[gx \cdot \frac{f(x)}{g(x)} \right] = \lim_{x \rightarrow c} g(x) \cdot \lim_{x \rightarrow c} \frac{f(x)}{g(x)} = 0 \cdot L = 0,$$

which contradicts our assumption that $l \neq 0$. \square

3 CONCLUSIONS

This paragraph will end the body of this sample document. Remember that you might still have Acknowledgments or Appendices; brief samples of these follow. There is still the Bibliography to deal with; and we will make a disclaimer about that here: with the exception of the reference to the \LaTeX book, the citations in this paper are to articles which have nothing to do with the present subject and are used as examples only.

A HEADINGS IN APPENDICES

The rules about hierarchical headings discussed above for the body of the article are different in the appendices. In the **appendix** environment, the command **section** is used to indicate the start of each Appendix, with alphabetic order designation (i.e., the first is A, the second B, etc.) and a title (if you include one). So, if you need hierarchical structure *within* an Appendix, start with **subsection** as the highest

level. Here is an outline of the body of this document in Appendix-appropriate form:

Introduction

The Body of the Paper

Type Changes and Special Characters.

Math Equations.

Inline (In-text) Equations.

Display Equations.

Citations.

Tables.

Figures.

Theorem-like Constructs.

A Caveat for the \TeX Expert.

Conclusions

References

Generated by bibtex from your .bib file. Run latex, then bibtex, then latex twice (to resolve references) to create the .bbl file. Insert that .bbl file into the .tex source file and comment out the command \thebibliography.

B MORE HELP FOR THE HARDY

Of course, reading the source code is always useful. The file acmart.pdf contains both the user guide and the commented code.

ACKNOWLEDGMENTS

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