\documentclass[conference]{IEEEtran}

\IEEEoverridecommandlockouts

% The preceding line is only needed to identify funding in the first footnote. If that is unneeded, please comment it out.

\usepackage{cite}

\usepackage{amsmath,amssymb,amsfonts}

\usepackage{algorithmic}

\usepackage{graphicx}

\usepackage{textcomp}

\usepackage{xcolor}

\def\BibTeX{{\rm B\kern-.05em{\sc i\kern-.025em b}\kern-.08em

T\kern-.1667em\lower.7ex\hbox{E}\kern-.125emX}}

\begin{document}

\title{Paper Title\*\\

{\footnotesize \textsuperscript{\*}Note: Sub-titles are not captured in Xplore and

should not be used}

\thanks{Identify applicable funding agency here. If none, delete this.}

}

\author{\IEEEauthorblockN{1\textsuperscript{st} Given Name Surname}

\IEEEauthorblockA{\textit{dept. name of organization (of Aff.)} \\

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}

\maketitle

\begin{abstract}

This document is a model and instructions for \LaTeX.

This and the IEEEtran.cls file define the components of your paper [title, text, heads, etc.]. \*CRITICAL: Do Not Use Symbols, Special Characters, Footnotes,

or Math in Paper Title or Abstract.

\end{abstract}

\begin{IEEEkeywords}

component, formatting, style, styling, insert

\end{IEEEkeywords}

\section{Introduction}

This document is a model and instructions for \LaTeX.

Please observe the conference page limits.

\section{Ease of Use}

\subsection{Maintaining the Integrity of the Specifications}

The IEEEtran class file is used to format your paper and style the text. All margins,

column widths, line spaces, and text fonts are prescribed; please do not

alter them. You may note peculiarities. For example, the head margin

measures proportionately more than is customary. This measurement

and others are deliberate, using specifications that anticipate your paper

as one part of the entire proceedings, and not as an independent document.

Please do not revise any of the current designations.

\section{Prepare Your Paper Before Styling}

Before you begin to format your paper, first write and save the content as a

separate text file. Complete all content and organizational editing before

formatting. Please note sections \ref{AA}--\ref{SCM} below for more information on

proofreading, spelling and grammar.

Keep your text and graphic files separate until after the text has been

formatted and styled. Do not number text heads---{\LaTeX} will do that

for you.

\subsection{Abbreviations and Acronyms}\label{AA}

Define abbreviations and acronyms the first time they are used in the text,

even after they have been defined in the abstract. Abbreviations such as

IEEE, SI, MKS, CGS, ac, dc, and rms do not have to be defined. Do not use

abbreviations in the title or heads unless they are unavoidable.

\subsection{Units}

\begin{itemize}

\item Use either SI (MKS) or CGS as primary units. (SI units are encouraged.) English units may be used as secondary units (in parentheses). An exception would be the use of English units as identifiers in trade, such as ``3.5-inch disk drive''.

\item Avoid combining SI and CGS units, such as current in amperes and magnetic field in oersteds. This often leads to confusion because equations do not balance dimensionally. If you must use mixed units, clearly state the units for each quantity that you use in an equation.

\item Do not mix complete spellings and abbreviations of units: ``Wb/m\textsuperscript{2}'' or ``webers per square meter'', not ``webers/m\textsuperscript{2}''. Spell out units when they appear in text: ``. . . a few henries'', not ``. . . a few H''.

\item Use a zero before decimal points: ``0.25'', not ``.25''. Use ``cm\textsuperscript{3}'', not ``cc''.)

\end{itemize}

\subsection{Equations}

Number equations consecutively. To make your

equations more compact, you may use the solidus (~/~), the exp function, or

appropriate exponents. Italicize Roman symbols for quantities and variables,

but not Greek symbols. Use a long dash rather than a hyphen for a minus

sign. Punctuate equations with commas or periods when they are part of a

sentence, as in:

\begin{equation}

a+b=\gamma\label{eq}

\end{equation}

Be sure that the

symbols in your equation have been defined before or immediately following

the equation. Use ``\eqref{eq}'', not ``Eq.~\eqref{eq}'' or ``equation \eqref{eq}'', except at

the beginning of a sentence: ``Equation \eqref{eq} is . . .''

\subsection{\LaTeX-Specific Advice}

Please use ``soft'' (e.g., \verb|\eqref{Eq}|) cross references instead

of ``hard'' references (e.g., \verb|(1)|). That will make it possible

to combine sections, add equations, or change the order of figures or

citations without having to go through the file line by line.

Please don't use the \verb|{eqnarray}| equation environment. Use

\verb|{align}| or \verb|{IEEEeqnarray}| instead. The \verb|{eqnarray}|

environment leaves unsightly spaces around relation symbols.

Please note that the \verb|{subequations}| environment in {\LaTeX}

will increment the main equation counter even when there are no

equation numbers displayed. If you forget that, you might write an

article in which the equation numbers skip from (17) to (20), causing

the copy editors to wonder if you've discovered a new method of

counting.

{\BibTeX} does not work by magic. It doesn't get the bibliographic

data from thin air but from .bib files. If you use {\BibTeX} to produce a

bibliography you must send the .bib files.

{\LaTeX} can't read your mind. If you assign the same label to a

subsubsection and a table, you might find that Table I has been cross

referenced as Table IV-B3.

{\LaTeX} does not have precognitive abilities. If you put a

\verb|\label| command before the command that updates the counter it's

supposed to be using, the label will pick up the last counter to be

cross referenced instead. In particular, a \verb|\label| command

should not go before the caption of a figure or a table.

Do not use \verb|\nonumber| inside the \verb|{array}| environment. It

will not stop equation numbers inside \verb|{array}| (there won't be

any anyway) and it might stop a wanted equation number in the

surrounding equation.

\subsection{Some Common Mistakes}\label{SCM}

\begin{itemize}

\item The word ``data'' is plural, not singular.

\item The subscript for the permeability of vacuum $\mu\_{0}$, and other common scientific constants, is zero with subscript formatting, not a lowercase letter ``o''.

\item In American English, commas, semicolons, periods, question and exclamation marks are located within quotation marks only when a complete thought or name is cited, such as a title or full quotation. When quotation marks are used, instead of a bold or italic typeface, to highlight a word or phrase, punctuation should appear outside of the quotation marks. A parenthetical phrase or statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.)

\item A graph within a graph is an ``inset'', not an ``insert''. The word alternatively is preferred to the word ``alternately'' (unless you really mean something that alternates).

\item Do not use the word ``essentially'' to mean ``approximately'' or ``effectively''.

\item In your paper title, if the words ``that uses'' can accurately replace the word ``using'', capitalize the ``u''; if not, keep using lower-cased.

\item Be aware of the different meanings of the homophones ``affect'' and ``effect'', ``complement'' and ``compliment'', ``discreet'' and ``discrete'', ``principal'' and ``principle''.

\item Do not confuse ``imply'' and ``infer''.

\item The prefix ``non'' is not a word; it should be joined to the word it modifies, usually without a hyphen.

\item There is no period after the ``et'' in the Latin abbreviation ``et al.''.

\item The abbreviation ``i.e.'' means ``that is'', and the abbreviation ``e.g.'' means ``for example''.

\end{itemize}

An excellent style manual for science writers is \cite{b7}.

\subsection{Authors and Affiliations}

\textbf{The class file is designed for, but not limited to, six authors.} A

minimum of one author is required for all conference articles. Author names

should be listed starting from left to right and then moving down to the

next line. This is the author sequence that will be used in future citations

and by indexing services. Names should not be listed in columns nor group by

affiliation. Please keep your affiliations as succinct as possible (for

example, do not differentiate among departments of the same organization).

\subsection{Identify the Headings}

Headings, or heads, are organizational devices that guide the reader through

your paper. There are two types: component heads and text heads.

Component heads identify the different components of your paper and are not

topically subordinate to each other. Examples include Acknowledgments and

References and, for these, the correct style to use is ``Heading 5''. Use

``figure caption'' for your Figure captions, and ``table head'' for your

table title. Run-in heads, such as ``Abstract'', will require you to apply a

style (in this case, italic) in addition to the style provided by the drop

down menu to differentiate the head from the text.

Text heads organize the topics on a relational, hierarchical basis. For

example, the paper title is the primary text head because all subsequent

material relates and elaborates on this one topic. If there are two or more

sub-topics, the next level head (uppercase Roman numerals) should be used

and, conversely, if there are not at least two sub-topics, then no subheads

should be introduced.

\subsection{Figures and Tables}

\paragraph{Positioning Figures and Tables} Place figures and tables at the top and

bottom of columns. Avoid placing them in the middle of columns. Large

figures and tables may span across both columns. Figure captions should be

below the figures; table heads should appear above the tables. Insert

figures and tables after they are cited in the text. Use the abbreviation

``Fig.~\ref{fig}'', even at the beginning of a sentence.

\begin{table}[htbp]

\caption{Table Type Styles}

\begin{center}

\begin{tabular}{|c|c|c|c|}

\hline

\textbf{Table}&\multicolumn{3}{|c|}{\textbf{Table Column Head}} \\

\cline{2-4}

\textbf{Head} & \textbf{\textit{Table column subhead}}& \textbf{\textit{Subhead}}& \textbf{\textit{Subhead}} \\

\hline

copy& More table copy$^{\mathrm{a}}$& & \\

\hline

\multicolumn{4}{l}{$^{\mathrm{a}}$Sample of a Table footnote.}

\end{tabular}

\label{tab1}

\end{center}

\end{table}

\begin{figure}[htbp]

\centerline{\includegraphics{fig1.png}}

\caption{Example of a figure caption.}

\label{fig}

\end{figure}

Figure Labels: Use 8 point Times New Roman for Figure labels. Use words

rather than symbols or abbreviations when writing Figure axis labels to

avoid confusing the reader. As an example, write the quantity

``Magnetization'', or ``Magnetization, M'', not just ``M''. If including

units in the label, present them within parentheses. Do not label axes only

with units. In the example, write ``Magnetization (A/m)'' or ``Magnetization

\{A[m(1)]\}'', not just ``A/m''. Do not label axes with a ratio of

quantities and units. For example, write ``Temperature (K)'', not

``Temperature/K''.

\section\*{Acknowledgment}

The preferred spelling of the word ``acknowledgment'' in America is without

an ``e'' after the ``g''. Avoid the stilted expression ``one of us (R. B.

G.) thanks $\ldots$''. Instead, try ``R. B. G. thanks$\ldots$''. Put sponsor

acknowledgments in the unnumbered footnote on the first page.

\section\*{References}

Please number citations consecutively within brackets \cite{b1}. The

sentence punctuation follows the bracket \cite{b2}. Refer simply to the reference

number, as in \cite{b3}---do not use ``Ref. \cite{b3}'' or ``reference \cite{b3}'' except at

the beginning of a sentence: ``Reference \cite{b3} was the first $\ldots$''

Number footnotes separately in superscripts. Place the actual footnote at

the bottom of the column in which it was cited. Do not put footnotes in the

abstract or reference list. Use letters for table footnotes.

Unless there are six authors or more give all authors' names; do not use

``et al.''. Papers that have not been published, even if they have been

submitted for publication, should be cited as ``unpublished'' \cite{b4}. Papers

that have been accepted for publication should be cited as ``in press'' \cite{b5}.

Capitalize only the first word in a paper title, except for proper nouns and

element symbols.

For papers published in translation journals, please give the English

citation first, followed by the original foreign-language citation \cite{b6}.

\begin{thebibliography}{00}

\bibitem{b1} G. Eason, B. Noble, and I. N. Sneddon, ``On certain integrals of Lipschitz-Hankel type involving products of Bessel functions,'' Phil. Trans. Roy. Soc. London, vol. A247, pp. 529--551, April 1955.

\bibitem{b2} J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68--73.

\bibitem{b3} I. S. Jacobs and C. P. Bean, ``Fine particles, thin films and exchange anisotropy,'' in Magnetism, vol. III, G. T. Rado and H. Suhl, Eds. New York: Academic, 1963, pp. 271--350.

\bibitem{b4} K. Elissa, ``Title of paper if known,'' unpublished.

\bibitem{b5} R. Nicole, ``Title of paper with only first word capitalized,'' J. Name Stand. Abbrev., in press.

\bibitem{b6} Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, ``Electron spectroscopy studies on magneto-optical media and plastic substrate interface,'' IEEE Transl. J. Magn. Japan, vol. 2, pp. 740--741, August 1987 [Digests 9th Annual Conf. Magnetics Japan, p. 301, 1982].

\bibitem{b7} M. Young, The Technical Writer's Handbook. Mill Valley, CA: University Science, 1989.

\end{thebibliography}

\vspace{12pt}

\color{red}

IEEE conference templates contain guidance text for composing and formatting conference papers. Please ensure that all template text is removed from your conference paper prior to submission to the conference. Failure to remove the template text from your paper may result in your paper not being published.

\end{document}