Template and Instructions for Special Issues of IEEE   
Transactions on Applied Superconductivity

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*Abstract*—(Style: TAS-abstract.) This template serves as an aid to authors as well as an instruction set. Instructions are in black, and helpful notations are in blue. Papers for Special Issues of IEEE Transactions on Applied Superconductivity can be prepared by replacing text in this template with new text, by replacing text in the example tables, by replacing the example graphics in the figures, and by replacing text in other areas. Copying and pasting can be used to make multiple instances of figures, tables, lists, equations, and other structures. A reference list template is also included, and examples of cross-references to this list are provided to facilitate making citations. This template adheres to the *IEEE Editorial Style Manual* so authors can directly visualize style and format requirements.

[[1]](#footnote-1)

*Index Terms*—Please choose four to five keywords or phrases in alphabetical order, separated by commas. A hierarchical list of terms is given in the IEEE Taxonomy located online at https://www.ieee.org/documents/taxonomy\_v101.pdf

# (Style: Heading 1) Introduction

**T**

his document is a template and instruction set for preparing manuscripts for special issues of the IEEE Transactions on Applied Superconductivity (TAS). Special issues are reserved for the publication of peer-reviewed scholarly articles of work presented at conferences. The process of publishing special issues is somewhat different than other processes used to publish conference proceedings. An invitation to submit a paper may be sent to the corresponding author for each presentation at the conference. However, articles are selected for publication by the editors of the special issue, after consideration of suitability and peer review. At least two reviews must be favorable to persuade an editor to decide to select an article for publication.

(Style: TAS-paragraph) Presentation of work at the conference is required for article consideration; however, this privilege does *not* guarantee publication of an article. Papers should meet the scope of TAS, which can be found at http://ieeexplore.ieee.org/xpl/aboutJournal.jsp?punumber=77#AimsScope. While topics at conferences might explore subject areas that are outside of the TAS scope, and while authors may be nonetheless invited to submit a paper in one such subject area, authors should consider seriously the readership of TAS and determine whether submitting an article to the special issue is the best way to communicate results to the intended audience.

In addition to the selection criteria above, all articles must conform to IEEE policies and standards. Authors should review their rights and responsibilities [1]. Authors should also note that manuscripts submitted for publication will be automatically checked for similarity with other published work. While it is common for material to be submitted for publication at various stages of development, papers submitted to special issues are expected to be of a high degree of development, with full referencing to prior contributing work. Reuse of material previously published should follow IEEE guidelines [2], including any use of graphics or data that might have previously appeared in a published figure or table.

Authors should be particularly cautious about publishing increments of work. Materials that are suitable for presentation at a professional conference might not be suitable for publication in a peer-reviewed format. Authors should expect to be challenged by referees if the achievement does not have substantial merit or if the work is too close to that described in a recent publication. Additional information related to special issues and conferences can be found at http://ieeecsc.org/pages /tas-special-issue-authors-resources.

# Preparing a Manuscript

## (Style: Heading 2, modified) Templates

This template is intended to be a source file and instruction set to assist authors in the preparation of manuscripts for TAS special issues. **Use of this template is strongly recommended.** There are many IEEE article templates available, including those available through the IEEE Author Center (formerly the IEEE Author Digital Tools) at ieeeauthorcenter.ieee.org. It is not recommended to use other templates as source files, because other templates have not been checked for conformity with TAS special issue publication policies, and they are not maintained by TAS editors. Also, check the version number on the template. Using expired templates, as well as reusing old manuscripts as templates, carries a risk that the formatting may not be consistent with the most recent policy update.

If you are reading a paper version of this document, please download the electronic file from the conference website or http://ieeecsc.org/pages/tas-special-issue-authors-resources so you can use it to prepare your manuscript.

If you would prefer to use LaTeX, download IEEE’s LaTeX style and sample files from the Author Center. Use the LaTeX files for formatting, but please follow these instructions. Like other templates, authors should note that LaTeX files are not maintained in conjunction with this template, and may contain inconsistencies.

Authors may opt not to use a template if the format for electronic submission can be accommodated, and if this template can be reproduced. Please follow the writing style specified by the *IEEE Editorial Style Manual* [3]. Table I outlines the font and spacing used in this template.

Special issues received only limited attention by IEEE Publications after the acceptance of the article. For this reason, the author carries the burden of responsibility for text style and formatting. IEEE Publications can reposition floating objects, including figures and tables as in this template, and reformat references. Apart from these services, manuscripts that do not closely approximate the special issue format can be *rejected*.

## (Style: Heading 2) How to Use This Template

This template is intended for Microsoft *Word* 2007 or later. **The option to maintain compatibility with previous versions has been retained; removing compatibility may disrupt the first page footnote**. Authors should note that this template creates a document on 8.5-inch by 11-inch paper with margins, indentation, line spacing, column widths, and other dimensions appropriately sized for the Transactions. These dimensions may not be properly constructed on other typesetting systems or paper sizes.

Most authors will find it convenient to replace the text sections in this template with new text, or type over sections of the template. When copying from another document, care should be taken to use the markup styles already defined in this template. Pasting as unformatted text, using “Paste Special”, may be helpful. Formatting changes, such as super- or subscripts, may need special attention after pasting. Headings and other format styles can be entered as plain text and then converted by highlighting the text and then selecting the appropriate style from the Styles menu. The predefined style will adjust fonts and line spacing.

This template also contains examples that can be cut and pasted. Helpful text points out the first occurrence of most examples. Examples include a single-level bulleted list, an enumerated list, a text box with a simple table, a text box with a complex table, a text box with a figure and caption, symbols and mathematics, and references. For floating objects such as the text boxes around the figures and tables, be sure to select the text box and not the content inside it when copying. Text box anchors are not locked, so the text boxes can be moved by re-positioning the text box anchors. **Be careful when deleting or moving text that has an anchor associated with it, because the associated text box will also be deleted or moved.** The object anchor for the text box containing Table I is attached to this paragraph. Move object anchors to appropriate locations and adjust the position settings so that the text adjusts to the object location. Position objects at the top of columns if possible. To position a text box, first click on the text box, then select Text Box Tools > Format > Position. Wrapping should be kept as Top and Bottom.

TABLE I

(Style: TAS table heading) Styles in this template

|  |  |  |  |
| --- | --- | --- | --- |
| Text style | Font size  (pt) | Line spacing  (pt) | Paragraph spacing  before / after (pt) |
| Title | 24 | 27 | 0 / 1 blank line |
| Authors | 11 | 12 | 0 / 3 blank lines |
| Heading 1 | 10 | 12 | 22 / 4 |
| Heading 2 | 10 | 12 | 18 / 4a |
| Body text | 10 | 12 | 0 / 0 |
| Abstract | 9 | 10 | 0 / 1 blank line |
| Footnote | 8 | 9 | 0 / 0 |
| Figure caption | 8 | 9 | 0 / 0 |
| Table heading | 8 | 9 | 0 / 0 |
| Table body | 8 | 9 | 0 / 0b |
| References | 8 | 9 | 0 / 0 |

(Table footnote is same style as TAS first page footnote) Footnotes for the entire table go here. Indent is 1 em, *i.e.,* a width equal to the font size. For 10 pt text, 1 em = 0.14 in = 0.35 cm.

aUse 6 pt before heading 2 paragraph when directly following heading 1.

bAdd 5 pt before paragraphs that occurs below a table line. Add 4 pt of space after a paragraph that occurs above a table line..

## Author Names in Native Languages

IEEE supports the publication of Chinese, Japanese, and Korean (CJK) author names in the native language alongside the English versions of the names in the author list of an article. Chinese authors may use either Simplified or Traditional characters. Authors must provide the native language name in unicode characters to be displayed in the byline of the article, in parentheses, after the English version of the name. The manuscript can be prepared using the “Insert Symbols” list in Microsoft *Word* or the CJK ASCII Unicode for LaTeX. It is essential that you carefully check any article proofs you receive prior to the publication of your paper to verify the correct rendering of the Chinese, Japanese, or Korean names.

The following font styles will be used when rendering Chinese, Japanese, or Korean characters in the final publication (Style: TAS bullet list, note 6 pt space before and after list):

* Simplified Chinese: SongMT;
* Traditional Chinese: SungMT;
* Japanese: MS Mincho;
* Korean: Batang.

Submitting a CJK name is straightforward using the “Insert Symbols” feature. Simply add the characters in parentheses after the name of each author who would like to have their name shown in their native language.

For submissions in either *Word* or LaTex, please ensure (Style: TAS enumerated list, note 6 pt before and after list):

1. the manuscript’s *Word* document or LaTeX file contains the proper characters;
2. the cover letter states that the manuscript contains author names in Chinese, Japanese, or Korean characters.



Fig. 1. (a) Graphic image that does not meet publication standards. The font size is too small for some text, the font color (gray) may not show up, and the colors will not be distinguished when printed in black and white. This graphic was produced using a default setting in Microsoft *Excel*. (b) A more suitable image that conforms to font size, line width, and color conversion guidelines. Note that IEEE Publications may resize graphics to produce acceptable quality. More info on figure captions can be found in [3]. Note the insertion of 1 em space between the figure number and the start of the caption. It is good practice to describe the figure in the caption. Note the insertion of one em space between “Fig. 1.” and the beginning of the caption text. This figure has been placed in its intended location as an example of option 1 for submitted manuscripts.

It is important to carefully check the rendering of the native language name in your article during article proof review prior to final publication.

## Manuscript Length and Format Options

Authors should observe page limits specified by the conference. Font sizes and line spacing should not be changed to accommodate page limits. Regular contributions are generally limited to **4 pages plus 1 optional page for references**. Invited papers, and special papers such as combined papers, may have other limits arranged by the editors. **Extra page fees should be paid at the time of manuscript submission**. Fees are not paid to IEEE; authors should follow instructions provided by the conference management for payment of fees related to special issues.

TAS works with IEEE Publishing to produce special issues. IEEE Publishing may reposition and resize figures and tables when typesetting the final manuscript. This service gives authors two options for locating the figures and tables in the submitted manuscript. Example of in-line enumeration: Option 1) Authors can place the figures and tables at their intended locations in the body text. Option 2) Authors can identify the location for figures and tables in the body text, and place the figures and tables themselves at the end of the document.

Authors that choose to follow Option 1 may try to position figures and tables at the top or bottom of columns, as has been done for Fig. 1. This option will give authors a good assessment of the length of the manuscript. Authors that choose to follow Option 2 may encounter difficulty assessing the manuscript length. An alternative method is to use the formula (example of in-line math) *p* = (*w* + 150*f* + 250*t* ) / 900, where *p* is the estimated number of pages, *w* is the word count of the body text, *f* is the number of figures, and *t* is the number of tables. For figures that have multiple plots, like Fig. 1, each plot should be counted when calculating *f*. The word count should begin at the start of the Abstract, and end just before the References section.

# Peer Review

## Manuscript Submission

Manuscripts are submitted to IEEE’s online manuscript peer-review system, *ScholarOne Manuscripts.* The special issue submission site will be preloaded with information from the conference program. Corresponding authors will receive an e-mail invitation to submit an article, with a direct link to the submission portal. The conference website should also provide a link to the submission portal. *Please note that the special issue portal will be different from the regular TAS portal.* Authors will be asked to update account information upon the access of the portal. Submission then starts within the Author Center by clicking on the link, “Click here to submit a new manuscript.” The presentation number should already be identified as awaiting submission.

There are multiple stages to the submission process. All stages must be completed before the manuscript becomes a full submission. Partial submissions may be removed by administrators. At the end of each stage you must click “Save and Continue”; simply uploading files is not sufficient. After the final step, a confirmation will be shown to indicate that the submission is complete. An e-mail confirmation will also be sent.

The source file should contain all figures and tables at the submission stage. It is not necessary to append the figures as full-page graphics or as separate image files at this stage. Source files in DOC, DOCX, PDF, PS, and RTF are acceptable. If LaTeX is used to prepare the document, a PDF or PS file must be generated for the source file.

## Suitability Check

Once the paper has been uploaded, a check of suitability will be made by the editorial staff. Policies for publication, which include suitability for publication, are listed at http://ieeecsc.org/pages/editorial-policies. Papers found not to be suitable will be rejected. Authors may be given an opportunity to resubmit a suitable manuscript. English language editing services can help refine the language of your article and reduce the risk of rejection without review. IEEE authors are eligible for a 10% discount at American Journal Experts; visit http://www.aje.com/go/ieee/ to learn more. Please note these services are fee-based and do not guarantee acceptance.

All articles submitted to *ScholarOne Manuscripts* will automatically be checked against published material. IEEE’s guidelines about plagiarism and reuse of material are described in detail in [1] and [2]. Papers with a high level of re-used content may be automatically rejected, and may in addition trigger action by IEEE’s Publications Standards Board, above any action taken by the special issue editors. This may include punitive actions.

## Peer Review

Editors will then arrange for peer review of the paper. Two reviews are generally required. The peer review will use the standard forms used by referees for regular articles. Authors should note that reviewers will be asked to provide a summary recommendation to the editor with four options: publish without alterations, publish after minor revisions, publish after major revisions, and reject. Editors will interpret a recommendation of “publish after major revisions” as a recommendation to *reject* a paper if the revisions do not result in an improvement of the manuscript. Further consultation with the reviewers may be considered by the editor in such cases. A recommendation of “publish after minor revisions” generally will not motivate the editor to seek additional opinions from reviewers.

Authors should note that the decision to accept or reject a manuscript lies solely with the editors. Recommendations made by reviewers to the editor advise, but do not obligate, the editor’s decision. Editors will also consider comments made by reviewers. In some cases, negative comments can overrule a positive recommendation, especially when such comments reinforce criticisms raised by another reviewer.

Adequacy of references is one of many factors considered by Transactions reviewers. Lack of adequate references is a cause for many papers to be rejected. One indication of timeliness and suitability is whether citations include recent articles that have appeared in the Transactions and other journals. Citation only to work primarily by the authors of the paper may not be sufficient demonstration of context used to establish timeliness and importance, so authors are highly encouraged to assess peer literature broadly. **Because adequate references are so important, the page limits of the special issue can be expanded by one page to provide references.** For instance, contributed regular articles are permitted 4+1 pages, with references either continuing onto the fifth page or entirely residing on the fifth page.

During the peer review, it is very important for authors to explicitly address each comment raised by referees and editors. **Red text** to indicate changes to the manuscript, such as the present text, has been found to be extremely helpful for facilitating the peer review process, and is strongly encouraged.

## Final File Submission

After your paper is accepted, you will be asked to upload final files to *ScholarOne Manuscripts*. There are *two* requirements at this stage. First, authors will be uploading a final PDF manuscript that will be available for download fromIEEE’s journal portal, Xplore, at http://ieeexplore.ieee.org. This PDF file should look exactly like how the author intends the final manuscript to look like, including the positioning of figures and tables. Authors should also take care to remove any red text, header and footer information, and other remnants of the peer review process.

Second, authors will be uploading a final source file and additional source files for each graphic object. The text source file may use either format option if it is typeset using this template, and it should contain the embedded figures. The source files for graphic objects may be in any of the following formats: TIF, PDF, JPG, GIF, EPS, DOC or PPT. TIF or PDF formats are preferred. Figure and table files should be named by combining the manuscript ID number with the figure identifier, for example: AB-02\_FIG1.TIF, AB-02\_FIG2.PPT, AB-02\_FIG3.PDF, etc., for the manuscript identified as AB-02. See more about figure preparation in Section III below.

An electronic copyright form will be requested after the paper is accepted for publication. Authors are responsible for obtaining any security clearances. Authors from certain institutions may require completion of the copyright form by an authorized agent, who might not be an author of the paper.

## Publication

The author-supplied final PDF file will be available on Xplore for download for a short period until it is replaced by the final copy produced by IEEE Publications. It is important to note that final document production uses conversion settings different than those used by your software. Resizing of figures might result. While the PDF file you submit indicates to IEEE Publications staff how you intend the final production layout to appear, layout changes can occur.

IEEE Publications will contact you with page proofs of your final article. Authors will have an opportunity to review page proofs and respond with any changes. **You must respond and approve page proofs before publication is final.** The approved page proofs then receive an article number, and this final copy replaces the PDF file on Xplore.

When all papers are resolved, they will be organized and published as a collection in the special issue of TAS devoted to the conference*.*

## Special Issue Deadlines

Special issues usually have firm deadlines. Undue delays in returning revision to articles, extensive revisions, or other time-consuming processes, can result in an editor rejecting the article from the special issue and deferring it to the regular issue. In addition, if you return page proofs late, your paper may appear in a later issue, identified as a conference-related paper. Fig. 2 shows a typical progress curve for a special issue.

## Electronic Image Files

Guidance for preparing electronic figures is no longer included in this template. Information contained in previous template versions should also be considered as obsolete. Current information is available at the IEEE Author Center, http://ieeeauthorcenter.ieee.org/. Graphic checking, resolutions, file types, and other information is now kept online at http://graphicsqc.ieee.org/. **Images that are clear after black-and-white printing or copying is a requirement.**

# Style

## IEEE Editorial Style Manual

This template conforms to the *IEEE Editorial Style Manual* [3]. Authors should download, read, and follow the manual. **Manuscripts that do not conform to the IEEE Style will be rejected.**The discussions about style presented here are not intended to override instructions in the *Manual*. Instead, the intention is to emphasize areas where frequent problems occur. Table II summarizes frequent problems. Table II is an example of a table with complex layout and multiple headings.

TABLE II

Common manuscript problems

|  |  |
| --- | --- |
| Location | Problem |
| Formatting | |
| Template | Latest template version not used |
| Figures | Figures not explanatory in black/white |
| Figures | Fonts in figures too small |
| Figures | Lines in figures too thin |
| Body text | Paragraph font does not obey style |
| Body text | Nonbreaking white space (ctrl-shift-space) not used between values and units |
| Body text | Symbols not in italic font |
| Body text | Latin abbreviations in appropriate font |
| Body text | Abbreviations and acronyms not defined |
| Math | Symbols not in appropriate font |
| Math | Subscripts and superscripts not appropriate |
| Math | Use center dot in compound units, e.g., A·mm–2 |
| References | Format [1], [2] or [1]–[3] not used |
| References | Reference is not formatted according to style |
| Structure and organization | |
| Abstract | Abstract does not reflect the conclusions |
| Introduction | Work is not placed in context of other work in the field; only author’s previous work is cited |
| Results | Alternative explanations are not discussed |
| Results | Work is incremental and originality is not explained sufficiently |
| Conclusions | Conclusions do not explain how the field has been advanced by the work. |
| Peer review | |
| Body text | Specific response is not given to each comment |
| Body text | Location of changed text is not identified |

## Units and Symbols

Use SI, MKS, or CGS as primary units. SI units are strongly encouraged. English units may be used as secondary units (in parentheses). An exception is when English units are used as identifiers in trade, such as “32-in monitor.” Avoid combining SI and CGS units, such as current in amperes and magnetic flux density in gauss. This often leads to confusion because equations do not balance dimensionally. If you must use mixed units, clearly state the units for each quantity in an equation.

A common mistake made by authors is neglecting to separate a number and its unit by a nonbreaking space. In Word use ctrl-shift-space to create a nonbreaking space. For example, “4.2 K” is correct, whereas “4.2K” is incorrect. A second frequent mistake is the use of Roman face for symbols instead of the Italic face. Italic face is required by the *IEEE Editorial Style Manual*, e.g., current density *J* is correct and J is incorrect.

The SI unit for magnetic field strength *H* is A/m. However, if you wish to use units of T, either refer to magnetic flux density *B* or magnetic field strength symbolized as µ0*H*. Table III summarizes common electromagnetic units. Notice that units of T become confused with the symbol for temperature *T* if the proper type face is not used. Use the center dot, code 183, to separate compound units, e.g*.*, “A·m2.”

(Example of layout option 2) **TABLE III HERE**

## Figures and Tables

IEEE Publications will typeset figures and tables at the top of columns when possible. **Authors are strongly encouraged to use the text boxes in this template to best represent the final file as well as estimate accurately the manuscript length.** While it is possible to produce an acceptable manuscript by placing graphics or constructing tables in the running text, the white space above and below the objects and their associated captions may be difficult to adjust properly.

A third frequent mistake made by authors is the reduction of figure and table size below graphics standards. While reducing the size of figures or tables can create space for additional text, font sizes and line widths can fall below the graphics standards. Sometimes figures are under-sized to crowd many figures and tables into the paper. This practice is strongly discouraged because it will likely result in a lack of sufficient explanation, which may cause the paper to not pass peer review. The reduced graphics may be enlarged when IEEE produces the final formatting of figures and tables, which can result in text extending beyond the manuscript page limit and the assessment of an extra page fee. Authors should display figures in a size that is both appropriate for the information they wish to convey, and which meets graphics standards.

All figures and tables must be referenced in the order in which they appear. For example, a reference to or discussion about Fig. 2 should not be placed in the text earlier than the first reference to or discussion about Fig. 1. The anchor for the text box containing Fig. 2 is attached to this paragraph. Place figure captions below the figures; place table titles above the tables. If your figure has two parts, like Fig. 1 for example, include the labels “(a)” and “(b)” as part of the artwork. Please verify that figures and tables mentioned in the text are also placed as objects. Please do not include captions as part of the electronic figures. Use the abbreviation “Fig.” even at the beginning of a sentence. Do not abbreviate “Table.” Tables are numbered with Roman numerals.



Fig. 2. Manuscripts accepted for a typical special issue as a function of the number of days after the start of peer review. Notice the size of the overall plot as well as the font size for figure axes.

## Axis Labels

Axis labels of plots are often a source of confusion. Use words rather than symbols, like the example in Fig. 3. Write the quantity “Magnetization,” or “Magnetization, M,” not just “M.” However, if there is not enough room on the axis to specify the quantity, write just the symbol “M,” but define it in the figure caption.

(Example of figure layout option 2) **FIG. 3 HERE**

IEEE allows two ways to designate units in graphs and tables. 1) Put units in parentheses. As in Fig. 3, for example, write “Magnetization (A/m)” or “Magnetization, M (A⋅m−1)” but do not write just “A/m.” 2) Label axes with a ratio of symbols and units. For example, write “Magnetization, M/(A⋅m−1)” or “Temperature, T/K” but do not write “Temperature/K.”

Multipliers can be especially confusing. Write “Magnetization (kA/m)” or “Magnetization (103 A/m).” Do not write “Magnetization (A/m) × 1000” because the reader would not know whether the top axis label in Fig. 2 meant 16000 A/m or 0.016 A/m. Figure labels should be legible, approximately 8–12 point type when reduced to journal column width. Guidance for common units in electricity and magnetism is provided in Table III.

## Color Figures

Color figures will be designated on the first page footnote. They will be available for the online version and the version distributed via CD. Please be certain that the black-and-white print version is understandable without the color information, as compared in Fig. 1. Color print versions of articles are not available for conference special issues.

## Footnotes and References

Footnotes are not common. Number footnotes separately in superscripts by using Insert > Footnote.[[2]](#footnote-2) Place the actual footnote at the bottom of the column in which it is cited; do not put footnotes in the reference list or in endnotes. Use letters for table footnotes as shown in Table I.

The citation style is different for IEEE Transactions than for other journals. Citations are numbered consecutively in square brackets [3]. **Authors should note that the brackets are part of the citation!** The sentence punctuation follows the brackets [3]. Multiple references [3], [4] are each numbered with separate brackets. A range of citations [1]–[3] incorporates an en dash. In sentences, refer simply to the reference number, as in [4]. Do not use “Ref. [4]” or “reference [4]” except at the beginning of a sentence: “Reference [4] shows ...” Sometimes an author will refer to a specific figure of a reference or to a specific page or equation from a reference. To avoid confusion, rewrite phrases such as “in Fig. 2 of reference [1]” to the IEEE cross-reference notation “in [1, Fig. 2].” Similarly, rewrite phrases such as “in equation (8) of reference [1]” to be [1, eq. (8)]. Other phrases may be rewritten as [1, Sec. IV], [1, Th. 4.2], or [1, Ch. 3].

This template has been set up with a reference list that can be typed over with your references. The list has been formatted to include the brackets as part of the citation when a cross-reference to the list is made. To insert a citation into text, use the cross-references function in Word: References > Cross-reference > Numbered item > Paragraph number, and select the reference number. The reference may need to be added to the list before the citation is made by this method.

Since 2012, the Transactions has used article numbers instead of page numbers [5]. This practice permits the online publication of articles in partial issues, well in advance of the publication date for the entire collection of articles from a conference in a special issue. **Authors should verify the article number on IEEE Xplore since other search engines may incorrectly list the page count or range instead of the article number, e.g., “pp. 1–5” instead of “601105.”**

Since the range of possible types of references is larger than can be discussed here, please refer to the *IEEE Style Manual* [3] for guidance about reference formatting. Of special concern for conferences, papers that have been presented at conferences should include the conference name, location, dates, and program identifier. Papers that have been submitted for publication should be cited as “submitted for publication” and should include the journal title. It is very important to cite other papers from the same conference by including: *“IEEE Trans. Appl. Supercond.,* submitted for publication.” Papers that have been accepted for publication but not yet assigned to an issue should be cited as “to be published” and include the journal abbreviation. Please give affiliations and addresses for private communications.

Capitalize only the first word in a paper title, except for proper nouns and element symbols. References that omit paper titles are incomplete. Paper titles are helpful to your readers and are strongly recommended. For papers published in translation journals, please give the English citation first, followed by the original foreign-language citation.

## Abbreviations and Acronyms

Define abbreviations and acronyms the first time they are used in the text, even after they have already been defined in the abstract. Abbreviations such as IEEE, SI, ac, and dc do not have to be defined. Abbreviations that incorporate periods should not have spaces: write “C.N.R.S.,” not “C. N. R. S.” Do not use abbreviations in the title unless they are unavoidable, for example, “IEEE” in the title of this article.

## Equations and Mathematics

The *IEEE Style Manual* [3] contains detailed instructions about equations and mathematics. A limited number of examples will be discussed below to provide templates that can be copied and pasted by the author. If you are using *Word,* use either the Microsoft Equation Editor or the *MathType* add-on, available at <http://www.mathtype.com>. “Float over text” should *not* be selected. It is important to make sure that the equation display mode complies with the required style and font size. This may require the equation to be inserted as a picture instead of an equation object.

Number equations consecutively. Tabbing in the Equation style defined in this template will allow equation numbers in parentheses to align flush with the right margin, as in (1) and (2) below. To make your equations more compact, you may use the solidus “/”, the exp function, or appropriate exponents. It is generally a good idea to use exponents with negative values and parenthesesto avoid ambiguities in denominators created by the solidus symbol. Be sure that the symbols in your equation have been defined before the equation appears, or define them immediately following the equation. Punctuate equations when they are part of a sentence, as in

 (1)

Displayed equations should be left justified starting from the standard paragraph indentation of 0.14 inches (3.6 mm). Simple equations, such as

*E = mc2* (2)

may not require the use of an equation editor. When equations have conditions, separate the conditions from the equation by two em spaces, as in

*V* = 0, when *I* < *Ic* (3a)

*V* = (*I* / *Ic*)*n*,  when *I* ≥ *Ic*. (3b)

Notice that, when the displayed equations are embedded within a paragraph, the line of text immediately after the displayed equation is not indented. Commas and explanatory text is helpful for conditional equations. Authors have discretion to number each equation of displayed mathematics with multiple conditions, as in (3a) and (3b) above, or to assign an equation number to the entire set of conditions, as in (3). Please try to confine displayed equations to one column width and break equations at appropriate algebraic symbols.

Italicize symbols. Use bold face for vectors and tensors. As mentioned earlier, *T* might refer to temperature, ***T*** could refer to torque, but T is the unit tesla. Notice how the unit is spelled out in the previous sentence: always spell out the unit when it is used without a quantity. Units are not capitalized when they share the same spelling as the name of a person, e.g., Tesla (name) and tesla (unit). Roman font should be used for functions, such as cos, exp, tanh, and so on. Refer to “(1),” not “Eq. (1)” or “equation (1),” except at the beginning of a sentence, “Equation (1) is ...”, or when making references to named equations, “Maxwell’s equation (1) ...” Use zeroth, first, *n*th, (*k*+1)th, to denote sequences or series, and do *not* use superscripts as in 0th, 1st, 2nd, 99th, *n*th, or (*k*+ 1)st.

## Other Recommendations

Use *italics* for emphasis and **bold** for strong emphasis; do not underline. Use one space after periods and colons. Hyphenate complex modifiers: “zero-field-cooled data.” Avoid dangling participles, such as, “Using (1), the potential was calculated.” In this example, it is not clear who or what used (1). Write instead, “The potential was calculated by using (1),” or “Using (1), we calculated the potential.”

Use a zero before decimal points: “0.25,” not “.25.” Use “cm3,” not “cc.” Indicate sample dimensions as “0.1 cm × 0.2 cm,” not “0.1 × 0.2 cm2.” Notice the use of the multiplication symbol “×”, code 215. The abbreviation for “seconds” is “s,” not “sec.” Do not mix complete spellings and abbreviations of units: use “Wb/m2” or “webers per square meter,” not “webers/m2.” When expressing a range of values, write “from 7 to 9” or “7–9” using an en dash, and not “7~9” or “7÷9.”

Parentheses are not acceptable in the text unless they are used in the following cases:

1. to define an acronym;
2. to show units;
3. to separate terms in an equation and remove ambiguities of exponents or denominators;
4. in references where required by the style guidelines;
5. to indicate the equation number after an equation or to refer to an equation;
6. to distinguish elements of a series in running text, such as a) item 1, b) item 2, c) item 3, and so on;
7. to identify individual items combined in a graphic figure, such as plot (a) or Fig. 1(a).

In American English, periods and commas are within quotation marks, like “this period.” Other punctuation is “outside”! The period and colon should be followed by a single space between sentences or clauses. Avoid contractions; for example, write “do not” instead of “don’t.” The serial comma is preferred: “A, B, and C” instead of “A, B and C.”

If you wish, you may write in the first person singular or plural. Use the singular if you are the only author. Use the active voice, for example, “I observed that ...” or “We observed that ...” instead of “It was observed that ...”. Better still, omit statements of observation and just report what was measured: “The susceptibility decreased with temperature” instead of “We observed that the susceptibility decreased with temperature.”

Remember to check spelling. If you are not fluent in English, please get a colleague to proofread your paper.

# Some Common Mistakes

The word “data” is plural, not singular. The subscript for the permeability of vacuum µ0 is zero, not a lowercase letter “o.” The term for residual magnetization is “remanence”; the adjective is “remanent”; do not write “remnance” or “remnant.” Use the word “micrometer” instead of “micron.” A graph within a graph is an “inset,” not an “insert.” The word “alternatively” is preferred to the word “alternately” unless you mean something that alternates. Use the word “whereas” instead of “while” unless you are referring to simultaneous events. Do not use the word “essentially” to mean “approximately” or “effectively.” Do not use the word “issue” as a euphemism for “problem.”

When compositions are not specified, separate chemical symbols by hyphens; for example, “NiMn” indicates the intermetallic compound Ni0.5Mn0.5 whereas “Ni–Mn” indicates an alloy of some composition NixMn1-x. Be careful with subscripts; the compound Nb3Sn is different from the alloy Nb3Sn, where the latter denotes a 3% fraction of Sn in Nb.

Be aware of the different meanings of the homophones “affect,” which is usually a verb, and “effect,” which is usually a noun, “complement” and “compliment,” “discreet” and “discrete,” “principal,” for example in “principal investigator,” and “principle,” for example in “principle of measurement.” Do not confuse “imply” and “infer.”

Prefixes such as “non,” “sub,” “micro,” and “ultra” are not independent words; they should join to the words they modify, usually without a hyphen unless a proper noun immediately follows. There is no period after the “*et*” in the Latin abbreviation “*et al.*” The abbreviation “*i.e.*” means “that is,” and the abbreviation “e.g.” means “for example.”

An excellent style manual and source of information for science writers is [6].

# Conclusion

A conclusion section is not required but is strongly recommended. The conclusion may review the main points of the paper. It should not replicate the abstract. A conclusion might elaborate on the importance of the work or suggest applications and extensions.

This template was prepared with the hope that manuscripts for special issues of the IEEE Transactions on Applied Superconductivity can be prepared to a uniform standard by all authors. Recommendations for changes to the template should be communicated to the special issue editor-in-chief.

# Appendix

Appendixes, if needed, appear before the acknowledgment.

# Acknowledgment

The preferred spelling of the word “acknowledgment” in American English is without an “e” after the “g.” Use the singular heading even if you have many acknowledgments. Use the follow formats: “S. B. Author, Jr., would like to thank A. Person for ...” or “The authors would like to thank T. People for…” Do not put sponsor and financial support acknowledgment in this section; it belongs in the first page footnote.

# References

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TABLE III

Units for Magnetic Properties (Layout option 2)

|  |  |  |
| --- | --- | --- |
| Symbol | Quantity | Conversion from Gaussian and CGS EMU to SI a |
| Φ | magnetic flux | 1 Mx → 10−8 Wb = 10−8 V·s |
| *B* | magnetic flux density,  magnetic induction | 1 G → 10−4 T = 10−4 Wb/m2 |
| *H* | magnetic field strength | 1 Oe → 103/(4π) A/m |
| *m* | magnetic moment | 1 erg/G = 1 emu  → 10−3 A·m2 = 10−3 J/T |
| *M* | magnetization | 1 erg/(G·cm3) = 1 emu/cm3  → 103 A/m |
| 4π*M* | magnetization | 1 G → 103/(4π) A/m |
| σ | specific magnetization | 1 erg/(G·g) = 1 emu/g → 1 A·m2/kg |
| *j* | magnetic dipole  moment | 1 erg/G = 1 emu  → 4π × 10−10 Wb·m |
| *J* | magnetic polarization | 1 erg/(G·cm3) = 1 emu/cm3  → 4π × 10−4 T |
| χ*,* κ | susceptibility | 1 → 4π |
| χρ | mass susceptibility | 1 cm3/g → 4π × 10−3 m3/kg |
| μ | permeability | 1 → 4π × 10−7 H/m  = 4π × 10−7 Wb/(A·m) |
| μr | relative permeability | μ → μr |
| *w, W* | energy density | 1 erg/cm3 → 10−1 J/m3 |
| *N, D* | demagnetizing factor | 1 → 1/(4π) |

aGaussian units are the same as cgs emu for magnetostatics; Mx = maxwell, G = gauss, Oe = oersted; Wb = weber, V = volt, s = second, T = tesla, m = meter, A = ampere, J = joule, kg = kilogram, H = henry.



Fig. 3. Magnetization as a function of applied field. It is good practice to explain the significance of the figure in the caption. Note that “Fig.” is abbreviated, and note that there is an em space after the number and period. This figure has been positioned according to Option 2 for manuscript preparation.

1. (Style: TAS First page footnote) Manuscript receipt and acceptance dates will be inserted here. Acknowledgment of support is placed in this paragraph as well. Consult the IEEE *Editorial Style Manual* for examples. This work was supported by the IEEE Council on Superconductivity under contract. ABCD-123456789. *(Corresponding author: Lance Cooley.)*

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2. It is recommended that footnotes be avoided except for the unnumbered footnote with the receipt date on the first page. Instead, try to integrate the footnote information into the text. [↑](#footnote-ref-2)