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Preparation of a Formatted Technical Work for the IEEE Power Engineering Society

J. W. Hagge, *Senior Member, IEEE*, and L. L. Grigsby, *Fellow, IEEE*

Abstract--Basic guidelines for the preparation of a technical work for the IEEE Power Engineering Society are presented. This document is itself an example of the desired layout (inclusive of this abstract) and can be used as a template. The document contains information regarding desktop publishing format, type sizes, and typefaces. Style rules are provided that explain how to handle equations, units, figures, tables, abbreviations, and acronyms. Sections are also devoted to the preparation of acknowledgments, references, and authors' biographies. The abstract is limited to 150 words and cannot contain equations, figures, tables, or references. It should concisely state what was done, how it was done, principal results, and their significance.

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I. NOMENCLATURE

A nomenclature list, if needed, should precede the Introduction.

II. INTRODUCTION

THIS document provides an example of the desired layout for a PES technical work and can be used as a Microsoft Word template. It contains information regarding desktop publishing format, type sizes, and typefaces. Style rules are provided that explain how to handle equations, units, figures, tables, abbreviations, and acronyms. Sections are also devoted

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Please use a proportional serif typeface such as Times Roman or Times New Roman and embed all fonts. (See your software's "Help" section if you do not know how to embed fonts.) Table I provides samples of the appropriate type sizes and styles to use.

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A PES TECHNICAL WORK

Point Size	Purpose in Paper	Special Appearance
8	Author affiliation, all captions, table text, figure text, footnotes, subscripts, superscripts, references, biographies	
9	Abstract, keywords	
10	Body text, equations	<i>Subheading</i> SECTION TITLES
11	Author Name	
24		Title

D. Section Headings

A primary section heading is enumerated by a Roman numeral followed by a period and is centered above the text. A primary heading should be in capital letters.

A secondary section heading is enumerated by a capital letter followed by a period and is flush left above the section. The first letter of each important word is capitalized and the heading is italicized.

A tertiary section heading is enumerated by an arabic numeral followed by a parenthesis. It is indented and is followed by a colon. The first letter of each important word is capitalized and the heading is italicized.

A quaternary section heading is rarely necessary, but is perfectly acceptable if required. It is enumerated by a lowercase letter followed by a parenthesis. It is indented and is followed by a colon. Only the first letter of the heading is capitalized and the heading is italicized.

E. Figures and Tables

Figure axis labels are often a source of confusion. Try to use words rather than symbols. As an example, write the quantity "Magnetization," or "Magnetization, M ," not just " M ." Put units in parentheses. Do not label axes only with units. As in Fig. 1, write "Magnetization (kA/m)" or "Magnetization ($\text{kA}\cdot\text{m}^{-1}$)," not just "kA/m." Do not label axes with a ratio of quantities and units. For example, write "Temperature (K)," not "Temperature/K." Figure labels should be legible, approximately 8- to 10-point type.

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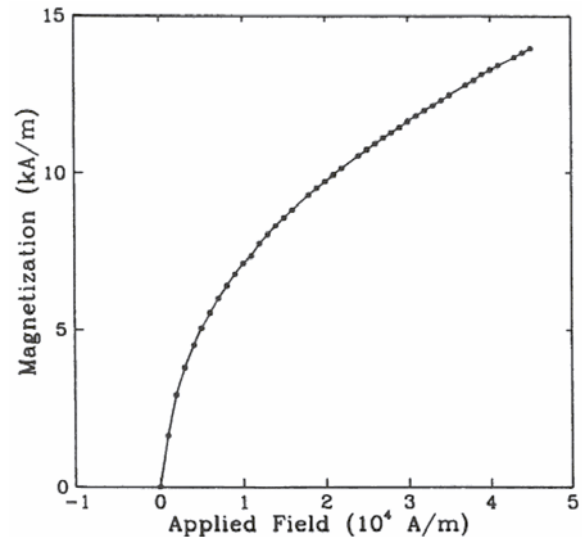


Fig. 1. Magnetization as a function of applied field. (Note that "Fig." is abbreviated and there is a period after the figure number followed by two spaces.)

All figures and tables must be in place in the text near, but not before, where they are first mentioned. Use the abbreviation "Fig. 1," even at the beginning of a sentence.

Digitize your tables and figures. To insert images in Word, use Insert | Picture | From File.

F. Numbering

Number reference citations consecutively in square brackets [1]. The sentence punctuation follows the brackets [2]. Multiple references [2], [3] are each numbered with separate brackets [1]-[3]. Refer simply to the reference number, as in [3]. Do not use "Ref. [3]" or "reference [3]" except at the beginning of a sentence: "Reference [3] shows...."

Number footnotes separately with superscripts (Insert | Footnote). Place the actual footnote at the bottom of the column in which it is cited. Do not put footnotes in the reference list. Use letters for table footnotes.

Check that all figures and tables are numbered correctly. Use arabic numerals for figures and Roman numerals for tables.

Appendix figures and tables should be numbered consecutively with the figures and tables appearing in the rest of the paper. They should not have their own numbering system.

G. Units

Metric units are preferred for use in IEEE publications in light of their global readership and the inherent convenience of these units in many fields. In particular, the use of the International System of Units (Système Internationale d'Unités or SI Units) is advocated. This system includes a subsystem of units based on the meter, kilogram, second, and ampere (MKSA). British units may be used as secondary units (in parentheses). An exception is when British units are used as identifiers in trade, such as 3.5-inch disk drive.

H. Abbreviations and Acronyms

Define less common 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 unless they are unavoidable.

See Appendix A of the Author's Kit for additional information and standard abbreviations.

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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. Use parentheses to avoid ambiguities in denominators.

Number equations consecutively with equation numbers in parentheses flush with the right margin, as in (1). Be sure that the symbols in your equation have been defined before the equation appears or immediately following.

$$I_F = I_B = -I_C = A^2 I_{A1} + A I_{A2} + I_{A0} = \frac{-J\sqrt{3}E_A}{Z_1 + Z_2} \quad (1)$$

where I_F is the fault current.

Use "(1)," not "Eq. (1)" or "equation (1)," except at the beginning of a sentence: "Equation (1) is"

IV. APPENDIX

Appendixes, if needed, appear before the acknowledgment.

V. ACKNOWLEDGMENT

The following is an example of an acknowledgment. (Please note that financial support should be acknowledged in the unnumbered footnote on the title page.)

The authors gratefully acknowledge the contributions of I. X. Austan, A. H. Burgmeyer, C. J. Essel, and S. H. Gold for their work on the original version of this document.

VI. REFERENCES

References are important to the reader; therefore, each citation must be complete and correct. There is no editorial check on references; therefore, an incomplete or wrong reference will be published unless caught by a reviewer or discussor and will detract from the authority and value of the paper. References should be readily available publications.

List only one reference per reference number. If a reference is available from two sources, each should be listed as a separate reference. Give all authors' names; do not use *et al.*

Samples of the correct formats for various types of references are given below.

Periodicals:

- [1] J. F. Fuller, E. F. Fuchs, and K. J. Roesler, "Influence of harmonics on power distribution system protection," *IEEE Trans. Power Delivery*, vol. 3, pp. 549-557, Apr. 1988.
- [2] E. H. Miller, "A note on reflector arrays," *IEEE Trans. Antennas Propagat.*, to be published.
- [3] R. J. Vidmar. (1992, Aug.). On the use of atmospheric plasmas as electromagnetic reflectors. *IEEE Trans. Plasma Sci.* [Online]. 21(3), pp. 876-880. Available: <http://www.halcyon.com/pub/journals/21ps03-vidmar>

Books:

- [4] E. Clarke, *Circuit Analysis of AC Power Systems*, vol. I. New York: Wiley, 1950, p. 81.
- [5] G. O. Young, "Synthetic structure of industrial plastics," in *Plastics*, 2nd ed., vol. 3, J. Peters, Ed. New York: McGraw-Hill, 1964, pp. 15-64.
- [6] J. Jones. (1991, May 10). *Networks*. (2nd ed.) [Online]. Available: <http://www.atm.com>

Technical Reports:

- [7] E. E. Reber, R. L. Mitchell, and C. J. Carter, "Oxygen absorption in the Earth's atmosphere," Aerospace Corp., Los Angeles, CA, Tech. Rep. TR-0200 (4230-46)-3, Nov. 1968.
- [8] S. L. Talleen. (1996, Apr.). The Intranet Architecture: Managing information in the new paradigm. Amdahl Corp., Sunnyvale, CA. [Online]. Available: <http://www.amdahl.com/doc/products/bsg/intra/intra/html>

Papers Presented at Conferences (Unpublished):

- [9] D. Ebehard and E. Voges, "Digital single sideband detection for interferometric sensors," presented at the 2nd Int. Conf. Optical Fiber Sensors, Stuttgart, Germany, 1984.
- [10] Process Corp., Framingham, MA. Intranets: Internet technologies deployed behind the firewall for corporate productivity. Presented at INET96 Annu. Meeting. [Online]. Available: <http://home.process.com/Intranets/wp2.htm>

Papers from Conference Proceedings (Published):

- [11] J. L. Alqueres and J. C. Praca, "The Brazilian power system and the challenge of the Amazon transmission," in *Proc. 1991 IEEE Power Engineering Society Transmission and Distribution Conf.*, pp. 315-320.

Dissertations:

- [12] S. Hwang, "Frequency domain system identification of helicopter rotor dynamics incorporating models with time periodic coefficients," Ph.D. dissertation, Dept. Aerosp. Eng., Univ. Maryland, College Park, 1997.

Standards:

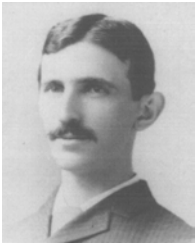
- [13] *IEEE Guide for Application of Power Apparatus Bushings*, IEEE Standard C57.19.100-1995, Aug. 1995.

Patents:

- [14] G. Brandli and M. Dick, "Alternating current fed power supply," U.S. Patent 4 084 217, Nov. 4, 1978.

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His employment experience included the American Telephone Company, Budapest, the Edison Machine Works, Westinghouse Electric Company, and Nikola Tesla Laboratories. His special fields of interest included high frequency.

Tesla received honorary degrees from institutions of higher learning including Columbia University, Yale University, University of Belgrade, and the University of Zagreb. He received the Elliott Cresson Medal of the Franklin Institute and the Edison Medal of the IEEE. In 1956, the term "tesla" (T) was adopted as the unit of magnetic flux density in the MKSA system. In 1975, the Power Engineering Society established the Nikola Tesla Award in his honor. Tesla died on January 7, 1943.

Editor's Note: J. W. Hagge was chair of the PES Technical Council and L. L. Grigsby was chair of the PES Publications Department when the original version of this document was published (January 1, 1993).