

# *Technical English Writing*

---

## **Editorial Aspects**

2011/9/11



# Outlines

---

- 论文格式
- 数学公式
- 图
- 表格
- 其他惯例



# 论文格式

- 遵守科技论文格式惯例
- 遵守目标刊物（会议）格式要求
- 注意观察：主要依靠自学，在计算机排版普及的今天尤其如此。要有严格、认真的态度。
- **Good habits must be scrupulously followed from the lowest to highest forms of technical publication because insensitivity will lead to inconsistency and poor quality. – D.R.Morgan, Dos and Don'ts of Technical Writing, *IEEE Potentials*, August/September 2005**
- 实例一： 期刊论文
- 实例二： IEEE会议论文模板



## 作者姓名

- 论文要给出作者姓名全拼。
- 遵守目标刊物或会议对中国作者姓名写法的规定。
- 参考文献列表中论文作者的名字可用首字母。
- 正文中引用文献时仅用姓的全拼，一般不加职称和头衔，也不加名字首字母：
  - **Craver et al. [5,6] devised another protocol attack.**
  - **In the difference expansion (DE) algorithm proposed by Tian [13], ...**



## 引号、斜体、空格

- 不要用引号或下划线表示**强调**，要用斜体：

说双关语

- In ordinary writing, use *double* quotes to quibble with the meaning of a word or give allegorical meaning.

- 新名词用斜体，但只用一次，以后用正体：

讽喻的  
调侃的

- We shall refer to this quantity as *backoff*, measured in decibels. For the above example, the backoff was set to **-10 dB relative to the peak power.**

- 数字和单位之间要加空格：**5 dB**

- 但如果该量用作定语时，要加短划：**5-dB contours**



## 数字

- 列举或计数时用 **one, two, three, ... , nine** 表示数值时用 **1, 2, 3, ... , 9**:
  - **We use two antennas in this configuration.**
  - **We assume that  $x$  is greater than 1.**
- 大于（含）**10**的数，通常用阿拉伯数字（可参照目标刊物的规定）。
  - **We use 25 antennas in this configuration.**
- 稿件要加页码，以便与编辑部、评审专家沟通。



# 科技写作中的用词

## ■ *which* 和 *that*:

- The filter **that** has just been proved permits us . . .
- This theorem, **which** was proved by Brown, permits us . . .

## ■ 如何确定用*which*还是用*that*:

- 试回答问题“**which one?**”如果能作出明确回答就用“**that**”:
- 例如上面第一句: 问“**which filter?**”回答是“**the one that has just been proved**”因此用“**that**”。
- 上面第二句: “**the one proved by Brown**”并不给出确定的答案。**Brown**证明的定理不一定是这个。



# 科技写作中的用词

- *can* 和 *may*:
  - According to (15), this expression can be written as ...
  - Interested readers may request copies of the report ...
- *affect* 和 *effect*:
  - *affect*: to cause something to change
  - *effect*: the result of some change





# 科技写作中的用词

## ■ *Notice* 和 *note* 的异同

– **If you note (or notice) a fact, you become aware of it:**

- **Note (or notice) that the report does not carry any form of official recommendation.**

– **If you note a fact, you mention it in order to draw people's attention to it:**

- **A government report released last week noted an alarming rise in racial harassment.**

■ **Note that you *notice* someone walking down the street, but you *note* something that requires mental deduction, not merely observation.**

– **Notice in Fig. 1 the curves all converge as  $x$  increases.**

– **Note that in the above, the limiting value of  $f(x)$  as  $x \rightarrow \infty$  is  $\pi/2$ .**



# 科技写作中的用词

- *Notation, distortion, performance*:
- 定义数学符号时 **notation** 是集合名词，复数不加s：
  - **The notation used in this paper is summarized in Table I.**
- 但 *notation* 也可作普通名词：
  - **Examination of Newton's original text shows several notations dealing with special cases.**
- *distortion* 和 *performance* 几乎永远不加s。



## 科技写作中的用词

- ***e.g.*** (= for example)和 ***i.e.*** (= that is) : 注意它们前后必有逗号，除非用于括号内一开始时省略前面的逗号：
  - **Capitalize words referring to specific parts of the text, e.g., Section A, Figure 3, Table II, and Appendix C.**
  - **If there is a choice, use a reference that is more readily available, i.e., if an author has published a conference version and a journal version of the paper, refer to the journal version.**
- 它们永远不能用于句首。



## 科技写作中的用词

- 尽量避免用普通单词组合生造行话（**jargon**）：**pathloss**, **basestation**, ...尤其不能用于标题（难以检索）。
- 可在文献数据库检索以确认某一行话是否能被接受。



## 数学符号和公式

- 句首不要用数学符号，必要时可加其他辅助成分：**Here, ...**  
**In this case, ...**
- 数学变量：
  - 单字母斜体，例如  $x, y, R_k, \beta_2 \dots$
  - 避免用多字母表示变量。个别例外如**SNR**要用正体，因为**SNR**可理解为  $S \times N \times R$ 。
  - 用正黑体表示向量（小写）和矩阵（大写）。
- 下标为缩写字时用正体，下标为变量时用斜体：
  - $x_i (i = 1, 2, \dots)$
  - 又如： $y_{\max}, x_i(t)$ ，这里下标*i*表示**input**，不是变量。
- **30 dB**：**dB**不是变量，不能用斜体。



## 数学符号和公式

- 函数与算符：多字母函数名例如 $\sin()$ ,  $\cos()$ ,  $\exp()$ ,  $\log()$ ,  $\max()$ 应该用**Roman**正体而不用斜体，以区别于几个变量的乘积： $\sin = s \times i \times n$
- 数学期望 $E$ 和表示转置的上标 $()^T$ 通常用斜体。
- 向量序列 $\mathbf{x}(n)$ 的转置为 $\mathbf{x}^T(n)$ ，而不是 $\mathbf{x}(n)^T$ 。同样，标量序列 $x(n)$ 的平方是 $x^2(n)$ ，不是 $x(n)^2$ 。
- 避免用数字做上标以免与幂次相混。如一定要用需加括号： $x^{(2)}$ 而不是 $x^2$ 。



## 数学符号和公式

- 不可用短划（hyphen）代替负号和减号： $x - y$ ，不是 $x - y$ ； $-10$  dB，不是 $-10$  dB。
- 公式后是否用标点符号根据目标期刊的规定。
- 数学变量首次使用时必须给出定义。



# 大写

- 普通名词组成的专业术语不用大写：
  - **code-division multiple access (CDMA)**
  - **bit error rate (BER)**
- 专用名词要大写：
  - **Universal Mobile Telecommunications System (UMTS)**
- 专业术语中的专用名词要大写，其余小写：
  - **fast Fourier transform (FFT)**
- 专指文中特定章节或图表等的名词要大写：
  - **Section A, Figure 3, Table II, Appendix C**
- 列举的项目要大写：
  - **User A, Receiver 1, Algorithm I**





## 参考文献

- 重视参考文献列表的规范和期刊对格式的具体规定。
- 提供的信息要完整。
- 关于作者名字：
  - 在列表中列出全部作者，或只给出第一作者加et al.
  - 正文中引用文献时只用姓氏：**Provos<sup>[3]</sup> proposed a different method ...**
    - 不必给出名字首字母
    - 不出现头衔和职称
- 关于未发表资料：根据期刊的规定。

## REFERENCES

- [1] F. A. P. Petitcolas, R. J. Anderson, and M. G. Kuhn, “Information hiding—A survey,” *Proc. IEEE*, vol. 87, pp. 1062–1078, 1999.
- [2] H. Wang and S. Wang, “Cyber warfare—Steganography vs. Steganalysis,” *Commun. ACM*, vol. 47, no. 10, pp. 76–82, 2004.
- [3] M. Kutter and S. Winkler, “A vision-based masking model for spread-spectrum image watermarking,” *IEEE Trans. Image Processing*, vol. 11, pp. 16–25, Jan. 2002.
- [4] H. Noda, J. Spaulding, M. N. Shirazi, and E. Kawaguchi, “Application of bit-plane decomposition steganography to JPEG2000 encoded images,” *IEEE Signal Processing Lett.*, vol. 9, no. 12, pp. 410–413, Dec. 2002.
- [5] D.-C. Wu and W.-H. Tsai, “A steganographic method for images by pixel-value differencing,” *Pattern Recognit. Lett.*, vol. 24, pp. 1613–1626, 2003.
- [6] A. Mayache, T. Eude, and H. Cherifi, “A comparison of image quality models and metrics based on human visual sensitivity,” in *Proc. Int. Conf. Image Processing (ICIP’98)*, vol. 3, Chicago, IL, Oct. 1998, pp. 409–413.
- [7] [Online]. Available: <http://watermarking.unige.ch/Checkmark/>
- [8] Z. Wang and A. C. Bovik, “A universal image quality index,” *IEEE Signal Processing Lett.*, vol. 9, no. 3, pp. 81–84, Mar. 2002.



## REFERENCES

1. Berghel, H. and O'Gorman, L. Protecting ownership rights through digital watermarks. *IEEE Comput.* 29, 7 (July 1996), 101–103.
2. Chen, B. and Wornell, G. Quantization index modulation: A class of provably good methods for watermarking and information embedding. *IEEE Transact. Info. Theory* 47, 4 (May 2001), 1423–1443.
3. Fridrich, J. and Goljan, M. Practical steganalysis of digital images: State of the art. In *Proceedings of SPIE, Security and Watermarking Multimedia Contents IV* (San Jose, CA, Jan. 21–24). International Society for Optical Engineering, 2002, 1–13.
4. Johnson, N. and Jajodia, S. Exploring steganography: Seeing the unseen. *IEEE Comput.* 31, 2 (Feb. 1998), 26–34.
5. Katzenbeisser, S. and Petitcolas, F. Defining security in steganographic systems. In *Proceedings of SPIE, Security and Watermarking of Multimedia Contents IV* (San Jose, CA, Jan 21–24). International Society for Optical Engineering, 2002, 50–56.
6. Kovacich, G. and Jones, A. What infosec professionals should know about information warfare tactics by terrorists (Parts 1 and 2). *Comput. & Sec.* 21, 1 (Jan. 2002), 35–41; 21, 2 (Mar. 2002), 113–119.
7. Marvel, L., Boncelet, C., Jr., and Retter, C. Spread-spectrum image steganography. *IEEE Transact. Image Process.* 8, 8 (Aug. 1999), 1075–1083.
8. Memon, N. and Wong, P. Protecting digital media content. *Commun. ACM* 41, 7 (July 1998), 34–43.



## References

- Bender, W., Gruhl, D., Morimoto, N., Lu, A., 1996. Techniques for data hiding. *IBM System J.* 35 (3–4), 313–336.
- Fridrich, J., Goljan, M., 2002. Practical steganalysis of digital images—state of the art. In: *Security and Watermarking of Multimedia Contents IV*, Proc. SPIE, San Jose, USA, vol. 4675, January 2002, pp. 1–13.
- Fridrich, J., Goljan, M., Du, R., 2001. Detecting LSB steganography in color and gray-scale images. *Mag. IEEE Multimedia (Special Issue on Security)* 1 (October–December), 22–28.
- Fridrich, J., Goljan, M., Hoge, D., 2002. Steganalysis of JPEG image: breaking the F5 algorithm. In: *5th Internat. Workshop on Inform. Hiding*, Noordwijkerhout, Netherlands, October 2002, pp. 310–323.
- Harmsen, J.J., Pearlman, W.A., 2003. Steganalysis of additive noise modelable information hiding. In: *SPIE Electronics Imaging*, Santa Clara, January 2003. Available from <<http://www.cipr.rpi.edu/~harmsj/pubs/harmsen03additive.pdf>>.
- Petitcolas, F.A.P., Anderson, R.J., Kuhn, M.G., 1999. Information hiding—a survey. *Proc. IEEE* 87, 1062–1078.



## PRL 正文中的文献引用

second means efficiency in hidden communication. Despite that steganographic techniques only alter the most insignificant components, they inevitably leave detectable traces so that successful attacks are often possible. The primary goal of attack on steganographic systems, termed steganalysis, is to detect the presence of hidden data (Wang and Wang, in press), and many steganalytic techniques have been developed (Fridrich and Goljan, 2002).

LSB steganography has low computation complexity and high embedding capacity, in which a secret binary sequence is used to replace the least significant bits of the host medium (Bender et al., 1996). However many steganalytic approaches have been developed to successfully attack the LSB techniques. The  $\chi^2$  method (Westfield and Pfitzmann, 1999) detects the presence of hidden data based on the fact that the occurrence probabilities



## 参考文献：

- [ 1 ] F A P Petitcolas ,R J Anderson ,M G Kuhn. Information Hiding —A Survey[J]. Proceedings of IEEE ,1999 ,87 (7) :1062 - 1078.
- [ 2 ] W Bender ,D Gruhl ,N Morimoto ,A Lu Techniques for Data Hiding [J]. IBMSystem Journal ,1996 ,35 (3 ,4) :313 - 336.
- [ 3 ] D C Wu ,W H Tsai. A Steganographic Method for Images by Pixel-Value Differencing[J]. Pattern Recognition Letters ,2003 ,24(9 ,10) :1613 - 1626.
- [ 4 ] A Westfeld. F5 —A Steganographic Algorithm[A]. In 4th International Workshop on Information Hiding ,Lecture Notes in Computer Science 2137[C]. Heidelberg ,Berlin ,Springer-Verlag ,2001 ,289 - 302.
- [ 5 ] J Fridrich ,M Goljan. Practical Steganalysis of Digital Images —State of the Art[A]. In :Security and Watermarking of Multimedia Contents IV , Proceedings of SPIE 4675[C]. San Jose ,USA :SPIE ,2002 ,1 - 13.
- [ 6 ] H Wang ,S Wang. Cyber Warfare —Steganography vs. Steganalysis[J]. Communication of the ACM(to appear)

# *End of the Unit*

---

2011/9/11