

Editorial Specifications on Figures and Tables in the Bilingual *Journal of Global Change Data & Discovery*

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Abstract: The academic journal in both Chinese and English is to disseminate the research results more widely without the limitation of languages. Figures and tables are two important parts of scientific and technical articles, which are powerful supports to the main viewpoint of the article. For the Journal in both Chinese and English, the consistency of figures and tables between two languages and normalization expression are as important as the academic consistency. Authors and editors should attach great importance to the making and editing of figures and tables. Compared with the monolingual journals, journals in both Chinese and English have common and special issues on figures and tables. This article systematically sums up the standard requirements on the figures and tables in scientific and technical journals, compiles the common mistakes of figures and tables during the editing based on the practice of the *Journal of Global Change Data & Discovery*, and then puts forward corresponding countermeasures for the reference of authors and editors.

Keywords: science and technical journals; journals in both Chinese and English; Journal of Global Change Data & Discovery; figures and tables; editor; specification; case analysis

1 Introduction

Academic content and dissemination are two important links to build the world-class academic journals. The *Journal of Global Change Data & Discovery* has been guided by the “high starting point” since its preparation for founding, and strives to publish the scientific data, the core digital resources in the era of big data; it adopts two languages, Chinese and English, which not only can facilitate the academic development in China, but also can integrate into the world effectively as English is the most common language in academic communication. The *Journal of Global Change Data & Discovery*, established in March 2017, is the only journal in both Chinese and English among the six bilingual journals approved by the State Administration of Press, Publication, Radio, Film and Television during 2016–2018^[1–3]. It has two features: (1) it focuses on the publication of data papers. Together with the “Global Change Research Data Publishing & Repository”, also published in both Chinese and English (<http://www.geodoi.ac.cn>), a new integration publication mode including metadata, datasets, and data papers is constructed^[4]. (2) Each article in this journal is both in Chinese and English, with the same digital object identifier (DOI). The editorial norm of bilingual journals is different from that of monolingual journals. In this article, the standard requirements for the fig-

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ures/tables of Sci-Tech journals was summarized, and based on the editing practice of the *Journal of Global Change Data & Discovery*, the common mistakes of figures/tables in bilingual journals in both Chinese and English, and corresponding countermeasures were put forward, in order to provide references for authors and editors.

2 Standard Requirements for Figures and Tables in Sci-Tech Articles

2.1 Types and Compositions of Figures and Tables

The Figures in Sci-Tech articles mainly include curve graph, structural graph, schematic graph, diagrams, block diagrams, flow charts, etc.^[5]. The basic elements of a figure mainly include figure order, figure title, figure body, and figure note, while the figure body consists of the items, labels, lines, and legends.

The types of tables include non-line table, system table, card-line table, three-line table, etc. The three-line table is adopted widely by editors in the world now as it is concise and clear. Three-line tables generally include the table order, table head, column headings, table body, lines, and table note, with the table body consisting of row headings, lines and data.

2.2 Format of Figures and Tables and Principles for Monolingual Journals

2.2.1 Format of Figures and Tables in the Chinese Journal

According to the *Common Standards for Authors and Editors*^[9], figures/tables should be numbered successively in numerals, such as Figure 1, Figure 2, etc. Each figure/table should have a short and exact title. The figure title is placed under the figure, while the table title is above the table. Figures/tables should be self-explanatory and placed after the texts which cite them.

2.2.2 Format of Figures and Tables in the English Journal

According to *The Chicago Manual of Style Online*^[12] and *Publications Handbook and Style Manual*^[13], the composition of figures/tables in English is basically the same as that in Chinese. However, English is more diverse in terms of expression. First, English words have the formats of full-spelling and abbreviation. For example, “Figure 1” or “Fig. 1”; secondly, English letters have uppercase and lowercase, and for each item in the figure/table, different expressions, such as “angular velocity”, “Angular velocity”, or “Angular Velocity”, are acceptable. Editors should make clear instructions and keep consistency in the journal.

2.2.3 Basic Principles of Figures and Tables

The basic principles of using figures/tables are as follows^[5-8]: (1) Necessity. Figures and tables cannot be replaced by simple text description; (2) Self-explanation. Each figure/table should stand alone, complete and informative in itself; (3) Consistency. The content in the figure/table should be consistent with the text; (4) Standardability. The production and expression of figures/tables, including quantity, units, symbols, etc., should follow the national standards; (5) Aesthetics. The layout of figures/tables should be neat, clear, and readable.

2.3 Requirements for Figures and Tables of *Journal of Global Change Data & Discovery*

2.3.1 Cartographic Requirements

Authors should provide independent and editable vector graphs, such as AI, Visco, Origin, emf, pdf, excel, CDR, word, or ppt formats. Line graph should be clear and concise, while the outline and main part in the photos should be distinct. Three-line table is more preferred.

2.3.2 Layout of Figures and Tables

The layout is introduced in the following four aspects.

(1) Figure/table caption. Chinese version: The word “Figure/Table” stands first, directly

followed by the number, with no space between, and then is the title of the figure/table, with two spaces between. English version: The word “Figure/Table”, number, and the title line up, with one space between the first two items two spaces between the last two items.

(2) Figure/table body. To maintain the consistency between Chinese and English versions, both the *x*- and *y*- axes in the figure and the column/row headings in the table are marked with item and unit in the format of “item (unit)”, such as “area (hm²)”. The first alphabet of the first word for each item is capitalized in the English version. The numbers in each column are aligned with the decimal point, with the same precision. The “zero” before the decimal point should not be omitted. When a figure/table spreads in two pages, the word “continued” is placed at the right top of the second page, with repeated column headings on the second page.

(3) Figures/table note. The note is placed above the figure title, and below the table body.

(4) Location of the Figure/table. The figure/table is placed flexibly in the full column or half column according to the size of the figure/table and the text.

There is no English translation for figures and tables in the Chinese version. The Chinese font is “FZShuSong-GBK”, while the English font is “Times New Roman”. The font size is 9 pounds for the title and 8 pounds for the words in the figure/table. The title of figures and tables in both Chinese and English are center-aligned, while the notes are full justification.

3 Common Errors of Figures/Tables in Journals in both Chinese and English

3.1 Similar Errors to Monolingual Journals

The National Education Commission of China issued a document on the standardization of figures/tables in Sci-Tech journals in 1998^[11], Chen^[12] discussed this in detail in his book, and many editors also studied the errors of figures/tables based on their editing experience. For instance, references [13–14] discussed the errors in the title of figure/table, references [15–17] investigated the method and errors on figure selection, references [18–19] summarized the common errors in tables, and reference [20] discussed the methods of checking figures/tables. However, we still find many similar errors in the figures/tables when we edit the manuscripts. Therefore, we list some most common errors here.

3.1.1 Lack of Necessity for Figures and Tables

In Sci-Tech articles, if the information can be described clearly in simple words, it should not be expressed in the form of figures or tables. As shown in Figure 1, the data in the “table” is relatively simple and can be clearly described by words. Therefore, the table is replaced by the text description: “In the sixth-order difference method, *k* values are 3, 2, 1, 0, 1, 2 and 3, and corresponding *b_k* values are -1/60, 3/20, -3/4, 0, 3/4, -3/20 and 1/60, respectively.”

<i>k</i>	-3	-2	-1	0	1	2	3
<i>b_k</i>	-1/60	3/20	-3/4	0	3/4	-3/20	1/60

Figure 1 Example for lack of necessity for a table

3.1.2 Incomplete Elements of Figures and Tables

The incomplete elements of figures and tables will seriously affect the reader’s interpretation. As shown in Figure 2, only the determinant coefficient *R*² was listed, with no *P* value and sample number *N*. Therefore, it is hard for readers to judge the fitting degree of the equation. The first column heading of the table in Figure 3 is missing. “Meteorological elements” should be added after confirming with the author. The caption of Figure 4 shows two subfigures (a) and (b), but there is no corresponding mark in the figure, which will confuse readers. Other missing elements, such as the *x*- and *y*- axis title, legend/scale, unit, etc., are no further discussed here.

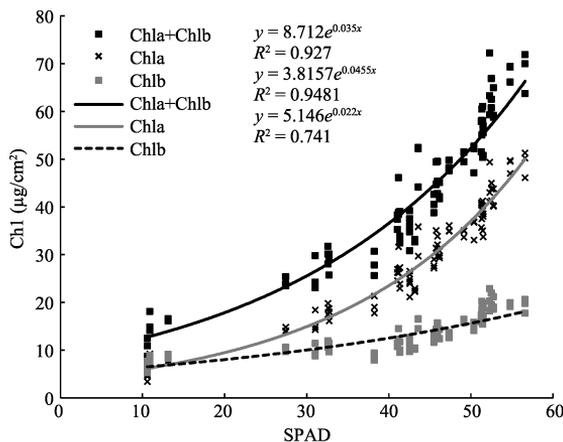


Figure 2 Example for incomplete figure/table elements

	Jan.	Feb.	Mar.	...	Annual Average
Solar radiation (kcal/cm ²)	8.22	9.60	13.81	...	166.00
Temperature (°C)	-13.2	-8.9	-1.5	...	3.0
Precipitation (mm)	2.0	2.4	1.8	...	126.6
Evaporation (mm)	42.1	67.3	61.4	...	2,242.8

Figure 3 Example of lacking column headings

3.1.3 Non-standard Expression of Quantity, Unit, and Symbols

The expression of quantity, unit and symbols in the figures and tables should follow the national standards. As shown in Figure 5, the physical quantity symbols r_i and ω of “weight radius” and “angular velocity” was misused as units in parentheses, which should be revised to km and rad/a, respectively. In Figure 6, before revision, the authors used the boxes to represent the boundary line, which is easy to confuse readers to regard them as planar areas. After revision, the linearity and planarity become clear at a glance.

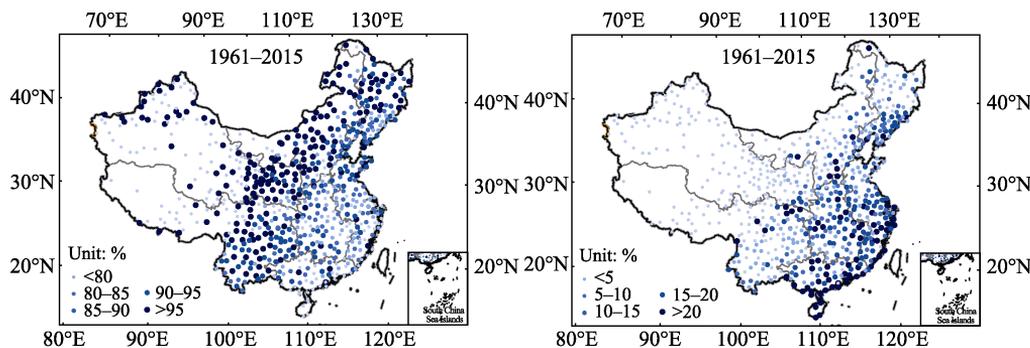


Figure 5 Proportion of short (a) and long (b) duration heavy rainfall to total heavy rainfall in 1961–2015, China

Figure 4 Example for no mark for subfigures

3.1.4 Unclear Expression of Lines or Texts

Lines in the figures/tables should be clear and uniform, while the text should not overlap the lines. As shown in Figure 7, the words, such as “ANISPLIM”, intersect with the downward arrows, leading to the unclear flow direction. These words should be moved to right side of the arrow. In Figure 8, some Chinese characters overlap with each other, and the scale is beyond the boundary line of the map.

3.1.5 Content Errors in Figures and Tables

There are two types of content errors in figures and tables. The first type refers to the error that can be inferred by figures themselves. For instance, the variation range of “100–10”, “500–100” and “1,000–500” Figure 9 is obviously illogical. It is revised to “10–100”, “100–500” and “500–1,000”. The second type refers to the error that is difficult to discover

by checking the figure/table itself only, but can be found by comparing with the text. For instance, you cannot find any wrong in the fifth column of the table in Figure 10; however, when compared with the text, 100 times difference occurs. Therefore, the data in this column was multiplied by 100 after confirmation with the author.

Name	...	Radius weights (r_j)	Angular velocity (ω)
Mercury	...	4.690,91 E-05	26.088,407,62
Venus	...	0.001,320,004	10.213,444,22
Earth	...	0.002,238,882	6.283,185,3
Mars	...	0.000,363,432	3.340,666,584
Jupiter	...	3.699,505,551	0.529,699,953
Saturn	...	2.038,821,640	0.213,302,742
Neptune	...	0.624,274,378	0.074,790,328
Pluto	...	1.153,633,570	0.038,129,411

Figure 5 Example for non-standard expression of quantity and unit

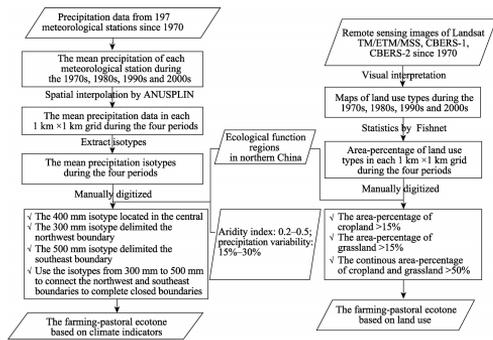


Figure 7 Example of texts overlapping with the lines

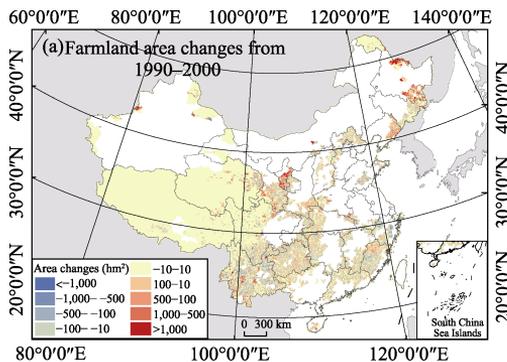


Figure 9 Example of data error in figures

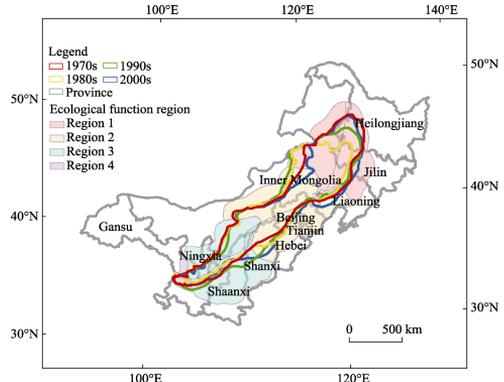


Figure 6 Examples for non-standard expression of legend

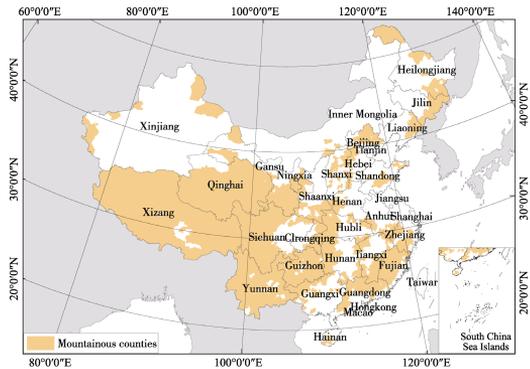


Figure 8 Example of unclear texts in the figure

Year	Occupied cultivated land (hm ²)	Change rate of occupied cultivated land (%)	Nonagricultural GDP (10 ⁸ Yuan)	Change rate of Nonagricultural GDP (%)	Decoupling elasticity	Decoupling type
2007	3,956.60	-	2,254.61	-	-	-
2008	4,278.58	8.14	2,785.55	0.235,5	0.35	Weak decoupling
2009	2,816.23	-34.18	3,339.49	0.198,9	-1.72	Strong decoupling
2010	6,301.40	123.75	3,963.64	0.186,9	6.62	Expansion negative decoupling
2011	7,642.09	21.28	4,975.62	0.255,3	0.83	Expansion connection
2012	19,337.46	153.04	5,912.18	0.188,2	8.13	Expansion negative decoupling
2013	7,064.21	63.47	6,977.74	0.180,2	-3.52	Strong decoupling
2014	12,418.42	75.79	7,975.56	0.143,0	5.30	Expansion negative decoupling
2015	13,948.60	12.32	8,861.94	0.111,1	1.11	Expansion connection
2016	13,104.69	6.05	9,887.89	0.115,8	-0.52	Strong decoupling

Figure 10 Example of data error in tables

3.2 Special Errors in Figures and Tables for the Journals both in Chinese and English

It takes a longer time for journals in both Chinese and English from accepting the manuscript in one language to the other language, with more times of revision, leading to more chances of inconsistency between two languages. In addition, different conventional expressions also should be considered. For example, in Chinese, special words are usually used to express “ten thousand”

or “100 million”, however, in English, due to different scales adopted in American and British countries, scientific notation is usually used to express “big numerals”, such as “ 5×10^9 t”.

3.2.1 Macro Errors

Macro errors refer to the inconsistency occurring in the order, title, and the figure/table body between two languages. As shown in Figure 11, the author updated the Chinese figure, but forgot to replace the figure in English. In addition, the correct and concise translation of the title is also important. Please refer to references [13–14, 21–22] for detail information.

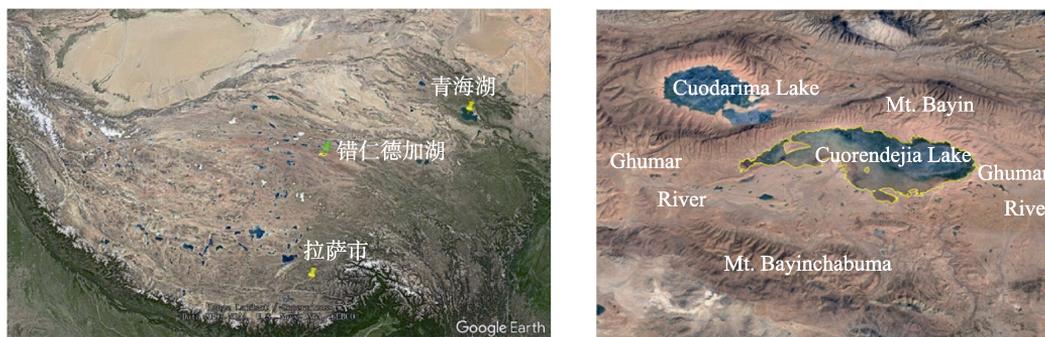


Figure 11 Example of inconsistent figures in Chinese and English versions (left: In Chinese; right: In English)

3.2.2 Micro Errors

Micro errors refer to the minor errors in the figure/body, such as quantity, unit, legend, effective digits, etc. In the right subfigure of Figure 12, the word “acidity” is misused to express the meaning of “aridity”. There is only one-letter difference between the two words, but with dramatically different meanings. The error in the left subfigure of Figure 13 has been described in 2.1.5. However, when comparing the right subfigure in English, there is another inconsistency, that is, the first range is <1,000 in Chinese, while it is $\leq 1,000$ in English. In addition, the longitude and latitude formats are different. In Figure 14, the effective digit of the last column in Chinese is 6 digits, while it is 7 digits in English. Under these conditions, editors should confirm with the author and revise them to keep consistency.

Errors like in Figures 12–14, it is correct to examine Chinese or English version separately. Only when the Chinese and English versions are checked at the same time, errors can be found. Therefore, editors of journals in both Chinese and English need to compare Chinese and English versions carefully when editing to eliminate inconsistencies in each process.

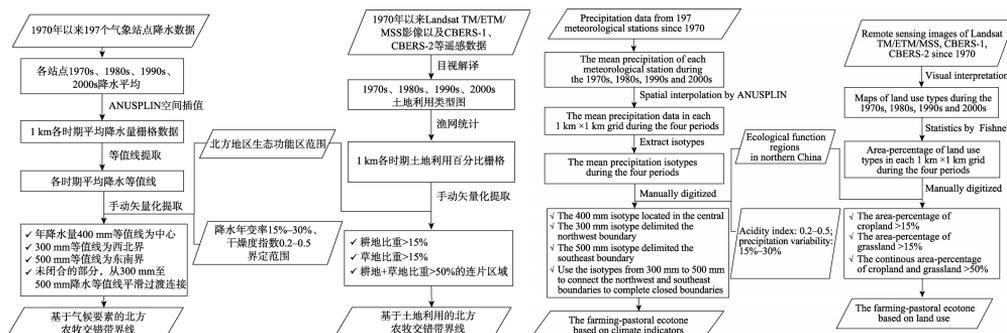


Figure 12 Example of inconsistent text between two languages (left: In Chinese; right: In English)

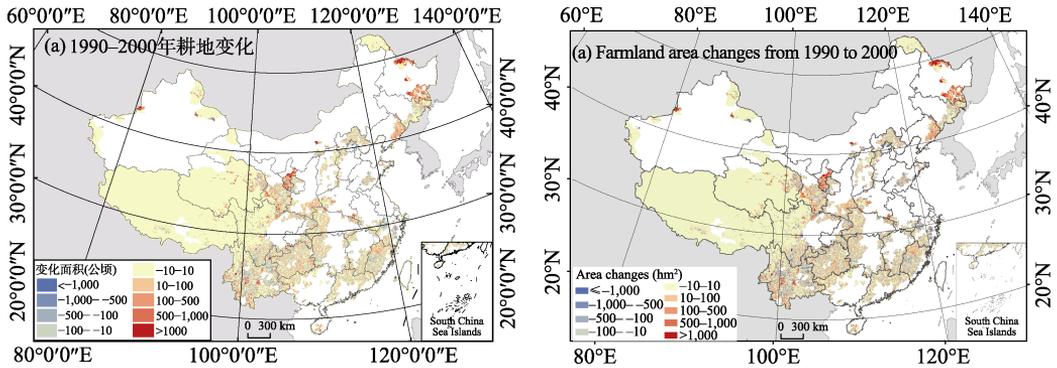


Figure 13 Example of inconsistent legend between two languages (left: In Chinese; right: In English)

高程类 (m)	各森林类型分布比例 (%)										单位面积水源源 (t/hm ²)
	温性针叶林	暖性针叶林	阔叶林	落叶阔叶林	常绿阔叶林	常绿阔叶林	暖性阔叶林	经济林	灌丛	草地	
<800	0.00	0.32	0.07	0.05	0.02	0.04	0.69	0.65	0.10	756.822	
800-900	0.03	3.83	0.44	0.97	0.80	0.37	7.84	3.75	0.96	746.343	
900-1,000	0.12	7.69	1.61	2.86	3.28	2.61	16.30	4.39	1.45	799.691	
1,000-1,100	0.30	6.73	3.73	3.12	4.28	6.16	6.06	4.24	1.67	767.326	
1,100-1,200	0.66	8.25	3.62	6.08	7.55	11.53	6.83	3.84	2.64	716.920	
1,200-1,300	2.11	11.96	5.25	10.52	9.41	20.55	9.60	8.33	5.91	675.710	
1,300-1,400	4.71	9.56	4.46	12.10	7.71	17.84	7.13	8.74	7.91	704.378	

Elevation class (m)	The proportion of area of each forest type (%)										UWQC (t/hm ²)
	Warm temperate coniferous	Warm temperate deciduous and mixed broad-leaf	Evergreen and mixed deciduous broad-leaf	Evergreen temperate broad-leaf	Worm	Econo	Shrub	ery			
<800	0.00	0.32	0.07	0.05	0.02	0.04	0.69	0.65	0.10	756.8215	
800-900	0.03	3.83	0.44	0.97	0.80	0.37	7.84	3.75	0.96	746.3432	
900-1,000	0.12	7.69	1.61	2.86	3.28	2.61	16.30	4.39	1.45	799.6907	
1,000-1,100	0.30	6.73	3.73	3.12	4.28	6.16	6.06	4.24	1.67	767.3263	
1,100-1,200	0.66	8.25	3.62	6.08	7.55	11.53	6.83	3.84	2.64	716.9200	
1,200-1,300	2.11	11.96	5.25	10.52	9.41	20.55	9.60	8.33	5.91	675.7097	
1,300-1,400	4.71	9.56	4.46	12.10	7.71	17.84	7.13	8.74	7.91	704.3783	

Figure 14 Example of inconsistent effective digits between two languages (left: In Chinese; right: In English)

4 Countermeasures to Avoid Errors in Figures and Tables

Errors in figures/tables are various, especially for journals in both Chinese and English. The following countermeasures are put forward to avoid above errors in figures and tables.

(1) Formulate national standards early on figures/tables of bilingual journals

There is no national standard for bilingual journals in both Chinese and English in the world, either the industrial standard in publishing. Therefore, formulating national standard is urgent. Before that, the column of “submission instruction” should be designed on the journal submission website, which gives a detailed description of the requirement on making figures/tables (format, size, and resolution), and the layout format in the manuscript.

(2) Popularize the standards and specifications on figures/tables of bilingual journals

Editors should help authors establish the correct cognition, that is, the quality of figures/tables is related to the overall quality of the manuscript, and the perfect show of each detail is to present his article more beautifully to readers. Editors should communicate with the author through written communication, phone call, even face-to-face communication to ensure that the author’s ideas are expressed accurately and well-formed. Meanwhile, make sure that the typesetter has fully grasped the requirements on figures and tables of your journal, so as to avoid the secondary errors during the typesetting.

(3) Improve the editorial skills

Editors, to a certain extent, determine the quality of publication. Many detailed information should be considered when editing figures/tables. Therefore, it is necessary to formulate editing standard actions so that editors can follow the actions and gradually develop a fixed editing pattern. For example, after each editing process, editors should look through the article again, focusing on the order, title, and body of figures and tables. The editorial office should hold regular seminars to discuss the problems found recently and find the solutions.

5 Conclusion

The disciplinary fields need bilingual journals, but authors and editors need to spend more energy, intelligence and costs than monolingual journals. Figures/tables play an important

role in Sci-Tech articles. Errors shown in figures/tables may be various Due to the difference in knowledge level and research object among authors,. Therefore, editors should adhere to the principles of necessity, self-explanation, consistency, standardization, and aesthetics, and make a rigid check on every detail of the figure and table. Moreover, editors should keep studying, establish a fluent communication mechanism with authors and typesetters to minimize the error rate of figures, tables and even papers, and thus improve the overall quality of the journal.

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