

Editing standards for titles of figures and tables in scientific papers with examples

Patrick Adams^{1, a}, Matthew Nelson^{1, b, *},

¹University of California, San Diego, 9500 Gilman Dr. La Jolla, CA, 92093-0100, United States
a.patrick_a_152412@gmail.com, b.matthew_20241011@yahoo.com

***Corresponding Author**

Abstract: Titles of figures and tables in scientific papers are characterized by self-evidence and conciseness. Based on the standards for editing and processing titles of figures and tables, this paper categorizes common issues with titles that do not meet the standards in scientific papers and selects typical examples. It points out problems such as missing modifiers and redundant references in the titles of figures and tables, and provides the correct forms of expression for them.

Keywords: Scientific paper, Figure and table title, Editing and processing, Standard specifications

1. Introduction

In scientific papers, figures and tables play a special role, capable of presenting and expressing content that is difficult to articulate through language in a clear and eye-catching form, facilitating readers' understanding and reference. Common types of figures in scientific papers include coordinate graphs, flowcharts, schematic diagrams, etc. The format of tables is primarily the three-line table; the types of tables include comparison tables, analysis tables, statistical tables, etc. The title of a figure or table is an important component, and its writing should not only be accurate and appropriate but also concise and to the point. Explanatory and specificity are its main characteristics [1-2]. Currently, there is considerable discussion among researchers on how to write titles for scientific papers [3-6], while there is very little research on the writing of figure and table titles in scientific papers [7-8], and even less on the content of their editing and processing. This paper starts with an analysis of the standards and normative expressions of figure and table titles, pointing out how to correctly, accurately, and reasonably express the meaning of figures and tables and the content of the article during the editing and processing of figure and table titles, providing a reference for colleagues in editing.

2. Standards for editing and processing of figure and table titles

The GB/T7713-1987 "Formatting Standards for Scientific and Technical Reports, Theses, and Academic Papers" [9] provides detailed explanations on the correct expression and writing standards for the titles of figures and tables in scientific papers. The main requirements for figure and table titles are as follows: First, they must be self-explanatory, meaning that the title itself should fully express the content shown in the figure or table; Second, they should be concise and accurate, meaning that the title should be succinct and accurately express the content intended to be conveyed. In editing practice, due to the multitude of standard specifications to be followed and the diversity in the number and types of figures and tables, it is inevitable that there may be omissions during the editing and processing.

3. Analysis of examples of editing and processing of figure and table titles

3.1. Lack of modifiers in figure and table titles: need for clear specification of research objects

The absence of modifiers in figure and table titles can affect their self-explanatory nature. Authors often base their paper writing on the research conditions and context within the text, which can lead to the omission of specific time, conditions, parameters, and other modifying parts when writing the titles of

figures and tables. If issues arise, editors can supplement the missing modifiers in the titles by reading the context of the paper.

Table 1 has the title "Crankshaft Natural Frequency." After understanding the author's research content, it is known that the natural frequency in the table refers to the frequency values corresponding to the first six modes of the crankshaft. Therefore, the title of Table 1 should be changed to "Natural Frequencies Corresponding to the First Six Modes of the Crankshaft."

Figure 1 is a common example of a title lacking self-explanatory clarity. The author only indicates the type of figure with the title "Method Flowchart" without specifying the particular process object, leading to readers being unable to accurately understand the author's research content and the intention behind the drawing after viewing the figure. In conjunction with the article, the method flow in Figure 1 specifically refers to the flow of the multi-scale feature extraction method. Therefore, the title of Figure 1 should be changed to "Flowchart of Multi-Scale Feature Extraction Method."

Table 1 Crankshaft Natural Frequency

Order/m	Natural Frequency/Hz
1	148.79
2	153.15
3	286.50
4	318.37
5	374.44
6	405.36

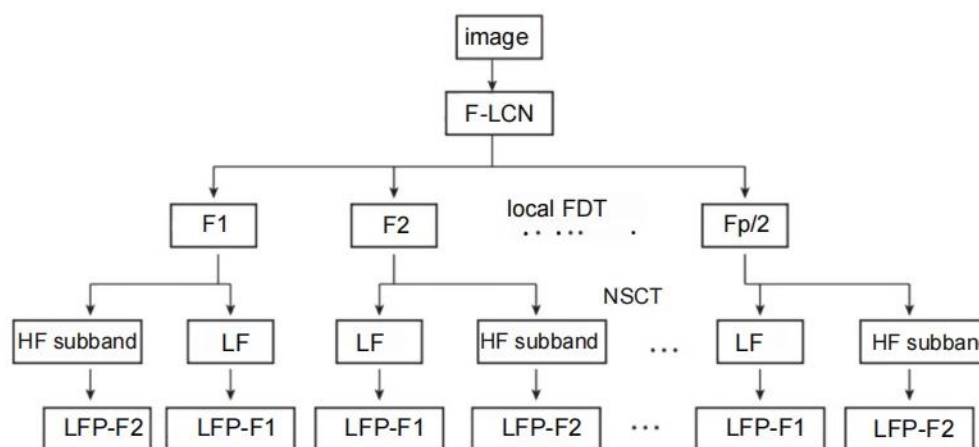


Figure 1 Method Flowchart

3.2. Inapt Fig/Tab titles: need clear, text-aligning edits

Some figure and table titles meet the requirement of self-explanatory nature, but upon careful reading of the article, it is found that the existing titles, although correct, are not close enough to the meaning of the text and must be modified. This modification should either directly point to the data items or correspond with the content of the preceding and following text, making the article clear and easy to read. If editors do not carefully consider during the editing process, such titles may often be overlooked or ignored.

In line with the content of the article, the experimental data in Table 2 specifically refers to the reflectivity of the matte surface obtained from the NaOH/IPA system under different temperatures and times. Therefore, it should be changed to "Reflectivity of Matte Surface Obtained from Na OH/IPA System under Different Temperatures and Times."

Table 2 Experimental Data on Texturing of Na OH/IPA System under Different Temperatures and Times

t/min	80°C	85°C	90°C	95°C
5	13.5	16.0	17.8	16.7
10	15.9	17.1	16.7	15.1
15	16.3	16.8	15.3	14.0
20	16.5	16.0	12.2	11.1

From the content of the article, it is known that CAE analysis was conducted on each numbered part before and after structural adjustment to obtain the stress values before and after light weighting, as shown in Tables 3 and 4. The title of Table 3 seems appropriate when compared with the table data alone, but considering Table 4 and the entire text, changing the title of Table 3 to "Stress Values of Various Conditions Before Structural Adjustment of Parts" would be more precise, echoing the title of Table 4.

Table 3 Parts with Stress Values Less Than 50 M Pa Under Various Conditions

Part Number	Bending Condition	Torsion Condition	Emergency Braking	Emergency Turning	Specification Before Optimization
1	82.23	88.01	72.56	86.31	50×50×4.0
2	82.36	88.36	76.23	85.24	60×40×4.0
3	83.45	90.32	84.44	90.15	60×50×4.0
4	83.60	95.23	79.20	85.26	50×40×3.0
5	83.12	87.25	78.31	80.23	50×40×2.0
6	85.22	91.12	88.24	92.32	50×50×3.0
7	85.69	88.36	84.65	79.33	60×50×4.0
8	87.02	93.56	81.26	83.25	50×50×3.0
9	87.21	95.36	90.05	92.12	50×30×3.0
10	89.32	94.32	86.59	84.11	50×40×3.0
11	91.25	96.12	90.35	87.77	50×40×3.0
12	94.31	99.06	82.56	93.28	50×40×2.0

3.3. Fig/Tab titles similar to headings: need integrated, concise edits

The title of Table 5 briefly indicates that the table data are the simulation results of the car's economy, while the column heading "Main economic data under the hybrid drive mode in direct gear" more specifically points out the meaning of the data in the table. This repetition not only complicates the form of the table title but also causes waste of space. Therefore, it should be adjusted to Table 6.

Table 4 Stress Values of Various Conditions After Structural Adjustment of Parts

Part Number	Bending Condition	Torsion Condition	Emergency Braking	Emergency Turning	Specification Before Optimization
1	95.26	100.20	90.34	99.36	50×40×3.0
2	99.25	105.36	98.23	98.45	50×40×4.0
3	96.87	112.37	101.36	105.30	50×50×4.0
4	105.36	99.25	98.24	104.31	50×40×2.0
5	101.25	111.02	90.36	98.89	40×40×2.0
6	101.69	98.34	94.56	110.58	50×40×3.0

7	106.25	120.55	108.32	103.33	50×50×3.0
8	103.33	126.87	98.35	99.30	50×50×2.0
9	98.77	119.24	100.31	110.49	50×30×2.0
10	110.35	126.01	98.23	108.19	50×40×2.0
11	116.62	130.27	110.23	97.54	50×3×02.0
12	120.73	110.21	99.32	111.20	50×30×2.0

Table 5 Simulation Results of Automotive Economy

Car Configuration	Test Order	Mileage/km	Fuel Consumption/L	Fuel Consumption per 100 km/L	Total Mileage/km	Total Fuel Consumption/L	Average Fuel Consumption per 100 km/L	Engine Off Time/s
Newly Added Range-Extended Vehicle	2	5.878	1.4448	24.579	11.83	2.9156	24.6461	811
		5.952	1.4709	24.712				834
Original Range-Extended Vehicle	2	5.748	1.5552	27.056	11.387	3.0638	26.9045	711
		5.639	1.5086	26.753				734

Table 6 Simulation Data on Economy in Hybrid Drive Mode During Direct Gear of Automobiles

Car Configuration	Test Order	Mileage/km	Fuel Consumption/L	Fuel Consumption per 100 km/L	Total Mileage/km	Total Fuel Consumption/L	Average Fuel Consumption per 100 km/L	Engine Off Time/s
Newly Added Range-Extended Vehicle	1	5.878	1.4448	24.579	11.830	2.9156	24.6461	811
	2	5.952	1.4709	24.712				834
Original Range-Extended Vehicle	1	5.748	1.5552	27.056	11.387	3.0638	26.9045	711
	2	5.639	1.5086	26.753				734

3.4. Fig/Table merge/split: accurate title expression needed

During the writing process of a paper, authors often overlook the rational merging or splitting of figures and tables. Some arrange multiple sub-figures together without relevant textual labels, or add figure captions that clutter the layout. Others simply arrange multiple figures without considering their intrinsic connections, resulting in a large number of figures and tables in the paper, and the internal relationships between the graphics are not reflected.

In Figure 2, the two sub-figures are unclearly referenced, and the author's addition of figure captions affects the aesthetics of the layout. During the editing process, it is suggested that the author add sub-figure titles for the shapes of the left and right oil chambers, namely (a) Rectangular Oil Chamber Structure; (b) I-beam Oil Chamber Structure. After adding the sub-figure titles, the meaning of the graphics becomes more explicit and clear.

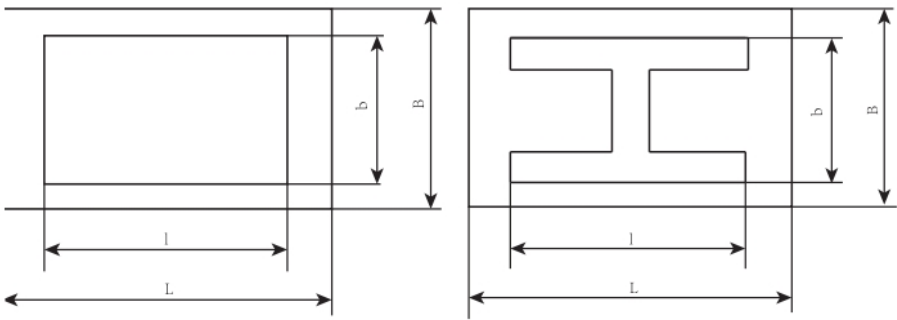


Figure 2 Schematic Diagram of Oil Cavity Shapes

Representing two or more figures with similar research subjects as sub-figures can not only reduce the number of figures but also more accurately express the meaning of the text through comparison, reflecting the intrinsic correlation of the simulation study. Figures 3 and 4 can be represented by Figure 5:

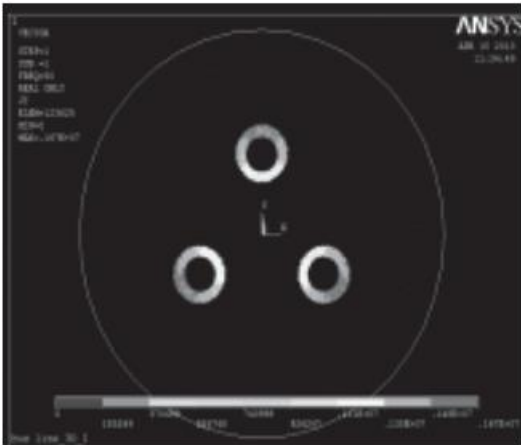


Figure 3 Overall Current Density Vector Diagram

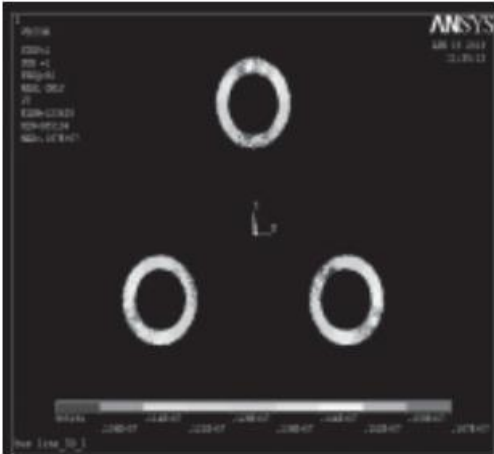
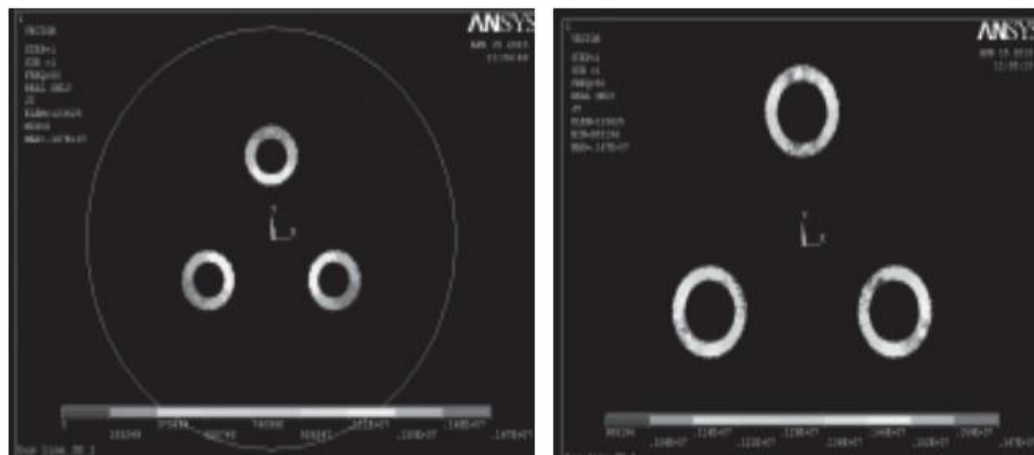


Figure 4 Current Density Vector Diagram of Conductive Rod



(a) Overall Current Density Vector Diagram (b) Conductive Rod Current Density Vector

Figure 5 Electromagnetic Field Distribution Diagram

4. Conclusion

By selecting typical examples, this paper analyzes and explains several common methods of figure and table title expression and error analysis in scientific papers from the perspective of writing standards and normative expressions. It points out how to correctly, standardly, and accurately write figure and table titles in editing practice. The methods presented in this paper can be applied to the writing and editing practice of similar types of figure and table titles, providing a certain reference and method for solving such problems.

5. References

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