

Guideline for authors

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1 General information

Frontiers of Physics (FOP) is an international refereed journal jointly published by Higher Education Press and Springer-Nature on a quarterly basis in English. Online versions are available through <https://www.springer.com/11467> (open choice) for users outside the Mainland of China or <http://journal.hep.com.cn/FOP> (free access) for users of the Mainland of China.

The journal publishes Review and Topical review Articles, and all papers are strictly peer-reviewed. We are committed to promoting the development of physics and providing the best services for your enjoying the distinctive charm of physics.

2 Aims & Scope

Frontiers of Physics, an international refereed journal, aims to summarize the latest and significant progress and highlight frontier achievements, hot topics and cross points in a variety of research fields in physics, such as quantum computation and quantum information; atomic, molecular, and optical physics; condensed matter and materials physics; particle, nuclear physics, astrophysics and cosmology, and to provide a platform for communication and exchange of ideas among physicists in China and overseas. The journal publishes Review and Topical Review articles. The Review provides a comprehensive overview of certain active research areas and the Topical Review offers a snapshot of recent progress in a particular and rapidly developing research field.

3 Types of papers

The journal only publishes review and topical review articles on the current topics of high interest to the researchers at the frontiers of physics. The Review gives a comprehensive overview of certain active research areas. The Topical Review provides a snapshot of recent progress in a particular and rapidly developing research field. Moreover, the commissioned Special Topics will be organized to reflect the new and cutting-edge research progress and the wide coverage of a certain research topic.

The following types of papers can be submitted to the journal:

Review (>20 pages) – The Review gives a comprehensive overview of certain active research areas. There is no strict page limit for each review article, but we expect that it is at least 20 pages long.

Topical Review (15-20 pages) – The Topical Review provides a snapshot of recent progress in a particular research field. It often deals with a subject which is still developing rapidly so a comprehensive review seems not possible. The typical length of a Topical Review is about 15000 words.

Special Collection – The Commissioned Special Collection organizes domestic and foreign outstanding research groups to contribute reviews or topical reviews in a specific research field. A Special Collection reflects the new and cutting-edge research progress and the wide coverage of a certain research topic.

4 Manuscript preparation, requirements, and submission instructions

4.1 Manuscript submission

Authors are encouraged to submit their papers via the online submission system <https://mc.manuscriptcentral.com/fop> or by e-mail to the managing editor Hongguang Dong (E-mail: donghg@hep.com.cn). The website guides authors step-wise through the creation and uploading of various files. Note that only PDF files are required for reviewing. To assist reviewers, please add line numbers and page numbers to your manuscript. After the reviewing process, the manuscript will be finally judged by responsible

editors who have the right to accept or reject a paper. Once the manuscript is finally accepted, all original source files are required.

4.2 Submission requirements

4.2.1 Cover letter

A cover letter must accompany each submission indicating the name, address, and telephone number of the authors to whom all correspondence is addressed. Please briefly describe the main contents and key highlights of the article. Authors are also encouraged to recommend some potential referees in their cover letters. Final selection of reviewers will be determined by the editors. However, the journal is not obliged to use the suggested reviewers. Final selection of reviewers will be determined by the editors.

4.2.2 Besides your article

We set up a special column “Special Focus” on the third cover page of the hard-copy of the journal to introduce a key laboratory, an institute, etc., in each issue. For this purpose, you are encouraged to incorporate a front-cover image along with a brief description and/or a recommended laboratory, an institute or a research department in the cover letter of your submission.

4.2.3 Manuscript for review/topical review articles

The Review gives an in-depth overview of certain active research areas, providing the reader with an appreciation of the importance of the work, historical context, a summary of recent developments, and a starting point in the specialist literature. The Topical Review provides a snapshot of recent progress in a particular and rapidly developing research field. It often deals with a subject which is still developing rapidly so a comprehensive review seems not possible.

Manuscripts should be divided into appropriate sections, with an extensive list of references. In addition to undergoing the same rigorous level of technical peer-review as original research papers, Review/Topical Review articles will be critiqued based on the general impact of the field being reviewed, the relevance of the field to other subjects, and acknowledgement of the contributing author as a dominant figure in the field. Therefore, it is strongly recommended that authors interested in submitting a Review/Topical Review article correspond with the Editor prior to submission.

5 Ethics in publishing (Duties of authors)

5.1 Originality and plagiarism

The authors should ensure that they have written about entirely work, and if the authors have used the work and/or words of others, these work/words have been appropriately cited or quoted.

Plagiarism takes many forms, from ‘passing off’ another’s paper as the author’s own paper, to copying or paraphrasing substantial parts of another’s paper (without attribution), to claiming results from research conducted by others. Plagiarism in all its forms constitutes unethical publishing behavior and is unacceptable.

5.2 Concurrent publication

An author should not in general publish manuscripts describing essentially the same research in more than one journal or primary publication. Submitting the same manuscript to more than one journal concurrently constitutes unethical publishing behavior and is unacceptable.

In general, an author should not submit a previously published paper for consideration in another journal. Publication of some kinds of papers (e.g., clinical guidelines, translations) in more than one journal is sometimes justifiable, provided certain conditions are met. The authors and editors of the journals concerned must agree to the secondary publication, which must reflect the same data and interpretation of the primary document. The primary reference must be cited in the secondary publication.

5.3 Acknowledgement of sources

Proper acknowledgement of the work of others must always be given. Authors should cite publications that have been influential deeply in the reported works. Information obtained privately, as in conversation, correspondence, or discussion with third parties, must not be used or reported without explicit, written permission from the source. Information obtained in the course of confidential services, such as refereeing manuscripts or grant applications, must not be used without the explicit written permission of the author of the work involved in these services.

5.4 Fundamental errors in published works

When an author finds out a significant error or inaccuracy in his/her own published work, it is the author's obligation to promptly notify the journal editor or publisher and cooperate with the editor to retract or correct the paper.

6 Copyright transfer

Copyright of papers published in *Frontiers of Physics* is transferred to Higher Education Press and Springer-Nature by the author(s). The copyright transfer form must be submitted when the manuscript is accepted. Authors are encouraged to submit the copyright together with submitting the manuscript.

Authors are asked to return by email or fax the signed statement of copyright transfer to the Editorial Office of *Frontiers of Physics*.

7 Manuscript preparation

The following components are required for a complete manuscript: title, author(s), author affiliation(s), abstract, keywords, main text, illustrations and tables, acknowledgements, appendices (if any), and references. There is no strict page limit for each review article, but we expect that it is at least 20 pages long. The typical length of a Topical Review is 10,000-15,000 words.

7.1 Title

The title of the paper should be explicit, descriptive and as brief as possible – no more than 20 words in length. Avoid abbreviations and formulae where possible.

7.2 Author names and affiliations

Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name, and, if available, the e-mail address of each author.

Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication.

The telephone and fax numbers (with country and area code) in addition to the e-mail address and the complete postal address of the corresponding author should be given.

In order to remove any equivocation arising from the transliterated name, we encourage the authors to add their names in their own languages in parentheses after their English name, such as Wei Wang (王伟).

7.3 Abstract

A concise and factual abstract in a range of 150-300 words is required. The abstract should summarize briefly the purpose of the paper, the main structures, the principal results and major message. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, they must be cited in full, without reference to the reference list. Also, abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

7.4 Keywords

Immediately after the abstract, provide a maximum of 8 keywords separated by commas, avoid general and plural terms and multiple concepts (avoid, for example, "and", "of"). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes. Use keywords that make your paper easily detectable for interested readers in literature databases. Repeating terms in the title is usually not needed.

7.5 Heading/Section levels (numbered)

For most articles, please use the following system of headings with no more than three levels:

- 1 Introduction
- 2 Experimental
 - 2.1 ...
 - 2.1.1 ...
- 3 Conclusion
- Acknowledgements
- References and notes

Please state the objectives of the work and provide an adequate background in the Introduction, avoiding a detailed literature survey or a summary of the results.

The "Acknowledgements section" is the general term for the list of contributions, credits, and other information included at the end of the text of a manuscript but before the references. Conflicts of interest and financial disclosures must be listed in this section. Authors should obtain written permission to include the names of individuals in the Acknowledgement section.

7.6 Text formatting

Manuscripts will be reformatted based on the electronic files provided by the authors. Please kindly send us the REVT_EX (preferred), LaTeX, or other plain TeX format files together with a PDF file.

7.7 Formulae and symbols

Formulae, symbols and all subscripts, superscripts, Greek letters, and other characters should be carefully checked. All displayed equations should be numbered consecutively, with the number set flush right and enclosed in parentheses.

7.8 Illustrations

- **Formatting:** All illustrations should be embedded in LaTeX processing documents in EPS, TIFF, PNG, SVG or JPEG format. Please identify any previously published materials by giving the original source and copyright information at the end of the caption.
- **Numbering:** All illustrations should be numbered by using Arab numerals. Please use (a), (b), (c), . . . to number headings for sub-figures.
- **Figure quality:** For grayscale images (i.e., black-and-white halftones and combined line and halftones), the originals should be sharp and detail visible in both highlights and shadows. The figure quality should meet the graphics resolution requirements below:
 - Line-drawings: 600 dpi
 - Color or Grayscale: 300 dpi
- **Color of figures:** The journal will publish all illustrations in color and free of charge. Unless necessary, however, black-and-white line-drawings and grayscale images are preferred.
- **Cover image:** Submission of cover image and description is encouraged but not required.

7.9 Tables

All tables should be embedded in LaTeX processing documents. A table title is required for each table. Tables should always be ordered in text in consecutive numbers. Please identify the original source for any materials from other publications at the end of the table heading.

7.10 Citations and references

References to literature are cited by number in square brackets at appropriate locations in the text. In-text citations should be in line with the references in numbering. For example, "This method has been widely used [1–4, 6]."

The references list should only include works that are cited in the text. Each numbered reference should contain only one literature. Below are five examples:

1. B. A. Bernevig and S. C. Zhang, Phys. Rev. Lett. 96, 106802 (2006)
2. R. Diener and T. L. Ho, arXiv: cond-mat/0705174 (2011)
3. Y. S. Wu, G. D. Li, and H. Y. Guo, Chin. Sci. Bull. (Kexue Tongbao) 19, 509 (1974) (in Chinese)
4. X. J. Liu, X. Liu, L. C. Kwek, and C. H. Oh, Front. Phys., DOI: 10.1007/s11467-020-0226-8
5. M. O. Scully and M. S. Zubairy, Quantum Optics, Cambridge: Cambridge University Press, 1999

7.11 Appendixes (if needed)

Appendix A

A1, A2, A3...

Appendix B

Appendix C...

7.12 Footnotes

Footnotes should only be used if absolutely essential. In most cases it will be possible to incorporate the information in normal text. If used, they should be numbered in the text, indicated by superscript numbers, and kept as short as possible.

7.13 Units of measurement

Use SI units as much as possible, including in tables and figures — if you must use Imperial or U.S. units, place the SI equivalent in parentheses after the first use.

7.14 Supplemental material

Supplementary information is peer-reviewed material directly relevant to the conclusion of an article that cannot be included in the printed version owing to space or format constraints. It is posted on the journal's website and linked to the article when the article is published and may consist of data files, graphics, movies or extensive tables. The printed article must be complete and self-explanatory without the supplementary information. Supplementary information enhances a reader's understanding of the paper but is not essential to that understanding. Supplementary information must be supplied to the editorial office in its final form for peer review. On acceptance the final version of the peer-reviewed supplementary information should be submitted with the accepted paper. Supplementary information is not subedited, so authors should ensure that it is supplied ready for publication online. To ensure that the contents of the supplementary information files can be viewed by the editor(s), referees and readers, please also submit a "read-me" file containing brief instructions on how to use the file. The supplementary information may not be altered, nor new supplementary information added, after the paper has been accepted for publication.

7.15 Materials from third parties

We prefer to avoid reproducing material (for example, figures, tables, boxes and videos) directly from other publications unless it is exceptionally informative. If you are using the previously published material, please note that it is your responsibility to obtain permission to reproduce copyrighted material from the publishers or other copyright holders of the original material. It is ideal to obtain permission before submitting the material.

8 Post acceptance

8.1 Proofreading

The proof will be sent to the corresponding author and should be returned within one week after receipt. Authors should clarify any questions of the proof in a query file. New results and materials are allowed upon the approval of the Editor. Please note that authors are urged to check their proofs carefully before returning one all-inclusive file via e-mail, since subsequent additional corrections will not be possible.

8.2 Author enquiries

For submission inquiries, tracking articles and any information please contact the Editorial Office in the Academic Journal Publishing Division, Higher Education Press. All correspondence for the journal should be sent to the following address. Please include the manuscript dispatch number in all correspondences.

8.3 Online first

This journal adopts Continuous Article Publishing (CAP) model. After proofreading, each article will be published online with the Digital Object Identifier (DOI) number and final five digit ID code.

8.4 Promotion of the article

In order to spread the article more widely, after the manuscript is formally accepted, we encourage the author(s) to post the paper to arXiv.org and indicate that it has been submitted to the journal *Frontiers of Physics*. If the

Digital Object Identifier (DOI) number and five digit ID code have been assigned, the author is suggested to indicate the DOI number and reference format: DOI: ***, Front. Phys. Vol.(No.), ID code (year).

In addition, we encourage the author(s) to provide a video abstract of three or five minutes and a short essay with about 1000 words in Chinese or English to briefly introduce the main contents and highlights of the article, which is used for publicity on several public platform, such as WeChat and ScienceNet. For example,

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