

# How To Successfully Make a Scientific Contribution Through IEEE Geoscience and Remote Sensing Letters

**A**FTER more than a year of serving as Editor-in-Chief, I have collected impressions from authors, reviewers and Associate Editors about certain patterns that lead to having manuscripts accepted. This Editorial aims at sharing these impressions. This text also provides an overview of the indispensable Author Digital Tool Box, available at [http://www.ieee.org/publications\\_standards/publications/authors/authors\\_journals.html](http://www.ieee.org/publications_standards/publications/authors/authors_journals.html). Every author should read this Tool Box carefully, as it provides full details, templates, examples etc. Sections I through V pose general questions for guiding the authors through the process of, finally, deciding to submit to IEEE GRSL. Sections VI and VII are suggestions in the form of checklists that authors may walk through before making a submission, either for the first version or for the revised manuscript. Section VIII provides additional hints, while Section IX concludes the Editorial, reinforcing the meaning of its title.

## I. ARE YOU A FREQUENT READER OF GRS JOURNALS?

You want to target a certain readership; do you belong to it? As stated in GRSL's webpage, this is a venue where

*papers should relate to the theory, concepts, and techniques of science and engineering as applied to sensing the earth, oceans, atmosphere, and space, and the processing, interpretation, and dissemination of this information.*

An excellent way of having your paper rejected is not presenting it clearly as belonging to a GRS Journal. IEEE GRSL is not a good destination for manuscripts rejected in other venues!

Read this Journal. Familiarize yourself with the authors of your field; they will most likely be the reviewers of your contribution. Browse the list of Associate Editors; one of them will handle your submission.

## II. WHERE DOES YOUR IDEA COME FROM?

A common problem with submissions is that they give the impression that they are the result of the approach "*I had this idea. It works!*" That, and only that, usually is not enough. A much better way of guiding your research is by posing a scientific question related to a relevant problem.

Successful manuscripts usually answer "Yes" to at least one of the following questions.

- Is it a solution to a well-established and relevant problem?
- Is it an extension of a well-known technique?

- Does your contribution improve a technique or methodology?

In any case, your revision of the literature must state clearly where your contribution fits. Such revision must be *complete* (Are all fundamental papers commented?), *updated* (Are you familiar with what is being published right now? Do you receive alerts from these Journals? Do you visit <http://arxiv.org/> regularly?), and *qualified* (prefer Journal articles over those published in conferences, conferences over Ph.D. and M.Sc. theses, and Ph.D. and M.Sc. theses over white papers and personal communications); books from mainstream publishers are fine when they are classical references or fundamental groundbreaking works.

Remember that just listing publications is not a revision of the literature.

## III. PLAGIARISM AND SELF-PLAGIARISM

Evidence of these harmful practices will be checked, at least, at three levels: by the Editor-in-Chief, by the Associate Editor, and by the reviewers. Do not engage in them. They will damage your reputation and that of your Institution.

Details on how IEEE deals with plagiarism can be found at [http://www.ieee.org/publications\\_standards/publications/rights/plagiarism.html](http://www.ieee.org/publications_standards/publications/rights/plagiarism.html).

## IV. DO YOU USE REAL DATA?

This is important for the kind of Letters we expect. Experiments do not have to be exhaustive, but the conclusions must be firmly grounded on real evidence.

## V. DO YOU NEED TO SHOW IT QUICKLY? WHY?

External pressures do not count! Tell the reader why your article is in Letters, not in the Transactions or J-STARS.

## VI. MAKE AN IMPECCABLE FIRST IMPRESSION

- 1) Prepare your manuscript in the final two-column single-space format. Do not tweak the style in order to make the contents fit in five pages. References must conform to the Journal style (read all details carefully); LaTeX and BibTeX, if adequately used, are really handy for this. If you are unsure of the quality of your technical English, have your manuscript professionally revised (otherwise, it is unlikely you will have it published).<sup>1</sup> The aid of well-intentioned colleagues, usually, is not enough.

<sup>1</sup>Examples of firms that provide these services are SPI (<https://www.spublischerservices.com/>) and AJE (<https://www.aje.com/en>).

- 2) Most likely, your manuscript will have images and plots. Use the proper format for producing them. Avoid JPEG, as it will employ lossy compression by default, introducing artifacts. Images are well represented in PNG, whereas plots are better produced in PDF or EPS.
    - (a) Do not be afraid of using colors in your plots. The PDF version of your manuscript will retain the color information at no extra cost.
    - (b) Plan your graphics as, quoting Edward Tufte [1], “instruments for reasoning about quantitative information.”
    - (c) Produce high-quality plots. Use, for instance, the R language [2] and keep a record of the commands that you used. It is likely you will have to make changes along the revision process, and you do not want to start all over again from scratch.
  - 3) Once you are satisfied with the product, “freeze” the version and export it to PDF (say SubmittedTwoColumn.pdf). Check it. Are all fonts visible, particularly in equations? Is numbering consistent across sections, figures, tables, etc.? Are all cited references, figures, and tables present? Are all listed references cited? Are all figures and tables cited? Do not number lines; this will be done by the system.
  - 4) Produce exactly the same manuscript in the revision format (single column, double space, say, SubmittedSingleColumn.pdf).
  - 5) Prepare a letter to the Editor-in-Chief (optional) and a Cover Letter in simple ASCII text if possible. Always avoid unnecessary attached files.
    - (a) Prepare a letter to the Editor only if you want to draw attention to something special. Do not ask for expedited processing, or anything unusual; it will be hardly taken into account. You may suggest one or two Associate Editors for their affinity to your work.
    - (b) State in the Cover Letter the basic facts of your submission: the main contributions and how your work advances the state of the art, why it belongs to this journal, and that all authors agree with the terms and conditions of the submission. Do not go into details. Say that your submission is composed of two files with exactly the same contents, one in the final format and the other in the revision format.
  - 6) Upload the files in the proper order, i.e., first SubmittedTwoColumn.pdf, followed by SubmittedSingleColumn.pdf.
  - 7) The manuscript submission system used for the GRS journals will produce a PDF file with your submission. Before sending the PDF, download it, and check it carefully. Verify again if all fonts are visible, particularly in equations.
  - 8) Send it for revision. You will receive a confirmation e-mail.
  - 9) Wait until the Editor-in-Chief contacts you. Although this journal has short turnaround times, every now and then, a reviewer asks for more time, or conflicting reviews require an additional opinion. Avoid contacting the Editor-in-Chief unless strictly necessary.
  - 10) The Editor-in-Chief will arrive to a decision based on the Associate Editor recommendation and on the reviewers’ comments and suggestions. The first decision will be one of the following.
    - (a) Accept as is: Very rare at this stage.
    - (b) Minor revision: Do not fool yourself; your manuscript can still be rejected. Check the deadline, and start working on the revised version.
    - (c) Major revision: Yes, major, so expect rejection if you do not comply with every single detail in the most convincing manner. Check the deadline, and start working on the revised version.
    - (d) Reject and resubmit: It was rejected, but if a proper rebuttal and a totally revised version are produced, it may end up published. Check the deadline, and start working on the revised version.
    - (e) Reject and transfer to TGARS/J-STARS: Very rare at this stage; more about this in Section VIII.
    - (f) Reject: Your work has been rejected for publication in this journal. Period. There is no invitation for a resubmission, unless you can clearly show there were gross errors in the review. At least, you ended up with informed criticisms, comments, and suggestions that will allow you to produce a revised manuscript that can be sent elsewhere.
- Rejection might follow any decision (minor revision, major revision, or reject and resubmit), mostly if the authors consistently fail at complying with the reviewers’ and Editors’ requests.
- In this journal, length is a major issue. If an accepted manuscript exceeds the limit of five pages in the final two-column single-space format, it will be rejected. That is why it is so important to always check the manuscript length.

## VII. PRODUCING A REVISED VERSION

Not having your manuscript rejected is great news, but a tough and delicate phase starts if your manuscript received any of decisions 10b, 10c, or 10d.

List all comments, criticisms, and suggestions in a new document, identifying the different reviewers by the number in which you received their recommendations. Include the Associate Editor’s and Editor-in-Chief’s suggestions, if available. Each item must be followed by your reaction to it; write it in a different color or font, so what you did will be clearly displayed. This will be your *Response Letter*, which is a fundamental unavoidable element of your resubmission. An ideal Response Letter should make reviewers accept your manuscript without even reading it. Call this document ResponseLetter.pdf.

Be respectful of the volunteer work done by the reviewers, the Associate Editor, and the Editor-in-Chief. Disagree if there is room for that, but always keep in mind that, most of the time, all comments and suggestions have the sincere intention of helping authors produce a better and more valuable article.

Produce a revised version of your manuscript in the single-column double-space version, keeping track of every single change you make, if possible using color. Text editors as, for instance, Microsoft Word, have revision tools. In LaTeX, it can be done, for instance, with the latexdiff package. Export this marked file as, for instance, RevisionFile.pdf. Together with the

Response Letter, it will provide proof that all required changes were made.

Produce the revised version in both double-column single-space and single-column double-space formats without tracking the changes. Call these files RevisedTwoColumn.pdf and RevisedSingleColumn.pdf, respectively. The former shows how the revised version looks and checks its length, whereas the latter will serve for further revising.

Make your resubmission with the files in the following order:

- 1) ResponseLetter.pdf,
- 2) RevisionFile.pdf,
- 3) RevisedTwoColumn.pdf, and
- 4) RevisedSingleColumn.pdf

and explain the rationale of your resubmission in the Cover Letter.

### VIII. ADDITIONAL HINTS

There are two main possible courses of action if, after revising your manuscript, it exceeds the firm limit of five pages. The first is starting a discussion, through the Editor-in-Chief, with the Associate Editor and the reviewers. This can be made in the Response Letter, stating clearly why some suggestions were left out. The second consists in producing the revised version and asking the Editor-in-Chief to consider its transfer to TGARS or to J-STARS. If the request is acknowledged, the transfer will carry the whole history of the submission, including the reviewers, so the new Editor-in-Chief can use this information for starting the new revision process.

Whenever possible, make the data and code available. This greatly enhances the value of your contribution, particularly if organized according to the Reproducible Research guidelines (see, for instance, [3]–[5]).

### IX. FINAL WORDS

The title of this Editorial was chosen carefully. While Sections VI and VII provide a guideline for a successful *submission*, Sections I–V offer guides for making a sound *scientific* contribution. We all must bear in mind that this journal aims at publishing the results of quality scientific research.

### REFERENCES

- [1] E. R. Tufte, *The Visual Display of Quantitative Information*, 2nd ed. Cheshire, CT, USA: Graphic Press, 2007.
- [2] R Core Team, R: A Language and Environment for Statistical Computing, R Foundation for Statistical Computing, Vienna, Austria, 2014. [Online]. Available: <http://www.R-project.org/>
- [3] Yale Law School Roundtable on Data and Code Sharing, “Reproducible research: Addressing the need for data and code sharing in computational science,” *Comput. Sci. Eng.*, vol. 2, pp. 8–12, Sep/Oct. 2010.
- [4] R. D. Peng, “Reproducible research in computational science,” *Science*, vol. 334, no. 6060, pp. 1226–1227, Dec. 2011.
- [5] G. K. Sandve, A. Nekrutenko, J. Taylor, and E. Hovig, “Ten simple rules for reproducible computational research,” *PLoS Comput. Biol.*, vol. 9, no. 10, Oct. 2013, Art. ID. e1003285.

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