AIP Conference Proceedings:
Guidelines for Authors

Dear Author

Thank you for writing and contributing a paper to the proceedings of your conference. These guidelines are intended to help everyone involved in the proceedings achieve a rapid and efficient publication, so we are grateful to you, and any co-authors, for taking the time to read them and for following the instructions below.

Reading lots of documentation can be time-consuming so we have tried to be brief and cover the most important points you need to consider before writing your paper for AIP Conference Proceedings. If you have any questions, do please contact us via e-mail at confproc@aip.org. We will do our best to write back to you within 1 working day but the proceedings mailbox is extremely busy and it may, sometimes, take a little longer to reply.

If you have already attended the event, we hope that the conference was enjoyable. If you are yet to attend, we wish you a safe journey.

Thank you, and best wishes
The AIP Conference Proceedings team

Introduction: What is in these guidelines?

Please take a moment to familiarize yourself with the documents contained within the ZIP file package of guidelines you have downloaded.

- **README_author_guidelines.pdf**: The file you are reading, which summarizes the main issues you should consider when writing your paper and preparing your article PDF file.
- **copyright_transfer.pdf**: You need to sign this form and send it to your conference organizer along with your article.
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- **article_templates**: This folder contains the manuscript templates in Word (or LaTeX) depending which set of guidelines you have downloaded.

What do I *have* to read?

In addition to the advice and guidance contained in this document, we ask you to read the document contained in **copyright_transfer.pdf** to familiarize yourself with the terms and conditions of the copyright transfer form. If you intend to use copyrighted materials in your paper please read **permission_guidelines.pdf**.

In essence, what do I need to do?

The proceedings publication process, including where to send your paper, is summarized below in the section *What is the publication process for proceedings*. The main requirement is that AIP Conference Proceedings requires a ready-to-publish PDF file of your article (with fonts embedded), prepared using our Word or LaTeX templates and following the general guidelines discussed in this document. However, for review/editorial reasons your proceedings editor may ask you for source files (Word or LaTeX) so make sure to check your conference web site on what is required from you. Be sure to check the web site for any limits on page count requested by the proceedings editors: AIP Publishing does not impose any limits on page counts, but the editors may do so.

Is there anything else I need to prepare or submit?

In addition to your article, you should send the following items to your proceedings editor:

- **A signed copyright transfer form**: The file **copyright_transfer.pdf** should be printed, signed and then scanned and saved as a PDF.
- **Copyright permission letters/e-mails**: The ZIP file folder "permissions" contains essential advice in the file **permission_guidelines.pdf**. If you have used copyrighted material in your paper you must obtain permission to use it from the owner of the copyright and/or authors. You need to send full details (e.g., copies of e-mails) to your editor who will subsequently submit them to AIP Publishing.
- **Color printing requests**: If your conference organizer/editor has asked AIP Publishing to produce printed copies they will be printed in greyscale (sometimes, mistakenly, called "black and white"). If you want to print any of your article pages in color please contact your proceedings editor directly to discuss this. AIP Publishing no longer accepts orders for color printing directly from authors: Color printing is managed through our arrangements with the editors only.

Essential points for all authors

Before you start writing, please consider the following essential points.

- **PACS numbers and keywords**. Our current templates refer to including them on your paper but these no longer required; however, you can still include them if you wish to do so. New templates are in preparation and will be released in late 2013.
- **No 1-page papers please**. AIP Conference Proceedings does not wish to publish extremely short proceedings papers, such as 1-page, abstract-only contributions and we reserve the right to exclude any such articles from the proceedings. AIP Publishing's online publication fees are completely independent of the number of pages in each article and we welcome substantial contributions, provided your page count complies with guidelines/limits set by your proceedings editor.
- **Online use of color is free.** We still get asked if it costs extra to use color within online proceedings papers and, of course, the answer is no it does not. The use of color in *printed proceedings* does incur additional cost, so please contact your proceedings editor to discuss this.
- **Avoid huge PDF files (10 MB maximum, ideally)**. For the benefit of readers and researchers accessing your article from slow or expensive internet connections we recommend that you try to keep your article PDF file below 10 MB. This is just a recommendation, *it is not a requirement*.
- **Prepare and format references with care**. Please prepare and format your references in accordance with the examples provided in the document **sample_ references.pdf**.

- **Do not add page numbers or headers/footers**. Our article templates deliberately do not include these so please *do not add them*. Adding them causes significant delays and creates unnecessary work for your editor. Page numbers and headers are added by AIP Publishing during the publication process.
- **Do not alter the margins of our templates**. They are carefully designed for AIP Publishing's production process, altering them can cause significant delays and create unnecessary work for your editor.
- **Embed all fonts into your article PDF**. The importance of font embedding is explained below, together with how to check this.
- **Use clear, legible graphics and diagrams**. We still receive articles containing graphics that are almost illegible, which significantly reduces readership of the article. Do not use "blocky" JPEG images, especially if they contain text: Readers of your paper will be grateful. If they cannot read it they are unlikely to cite it.
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What is the publication process for proceedings?

Proceedings publication differs from regular journals in several aspects:

(1) Most pure proceedings publications, including ours, use author-prepared PDF files for publication and production of printed copies.
(2) Proceedings papers are submitted directly to the proceedings editors who manage the review process and collect together the accepted articles and signed copyright transfer forms.
(3) The proceedings articles, and signed copyright transfer forms, are submitted to AIP Publishing (by the editors) in a single batch, rather than one-by-one as each paper is ready.
(4) The proceedings papers are published together as a single collection (volume) of AIP Conference Proceedings.

Proceedings editors undertake a review of papers in accordance with community and conference traditions/expectations and they will advise you of any changes you may need to make, prior to it being accepted. Once the editors have collected sufficient accepted papers, or as many papers as authors are willing to write, they submit them to AIP Publishing in a single batch. We cannot publish any proceedings until the entire set of files submitted to us meets the requirements of our publication and production systems. Consequently, it is extremely important for all authors to follow our guidelines so that the proceedings are not delayed by problematic papers.

Some general notes on graphics

The guiding principle is to *think of your readers*. Will they be able to read the text with very small graphics, especially scaled-down bitmap images? Try to consider readers who may have restricted vision. Generally, use the highest quality graphics possible, placed within your article at a sensible size so that the text is clear and legible. Here are some recommendations for raster images (halftones, line art/bitmaps):

- If you are scanning line art: use a minimum 600 dpi resolution.
- If you are scanning photographs or images (creating halftones): 300 dpi.
- Use 600 dpi for combinations line art halftones.
- Save line art as black/white bitmap, not greyscale.

- Save halftones and combinations as greyscale, not black/white bitmap.

Notes on color in graphics

- **Within online proceedings or CDs**: We still receive questions about the use of color graphics in electronic proceedings so do please be assured there are *no costs at all for color graphics within online proceedings or on CDs*. We strongly support and encourage the use of color where it assists with communicating and expressing the science contained within your paper.
- **Within printed proceedings:** Printed proceedings are only produced if they have been ordered by the conference organizers. Within online proceedings all color graphics/images will, of course, remain in color but within the printed proceedings they will be reproduced in greyscale (sometimes, mistakenly, called "black and white"). If you want to have specific pages of your article printed in color you need to contact your proceedings editor to request this. AIP Publishing no longer accepts orders for color printing directly from authors: Color printing is managed through our arrangements with the editors only.

Conversion of color images/graphics to greyscale
Authors are advised that some colors do not reproduce well when converted to greyscale for printing. You are advised to print your color graphics on one or two reasonable quality office laser printers to determine whether the colored elements are easy to read. Although this check is not fully scientific, it may highlight obvious problems. For example, if your graphics contain fine line art that uses lighter shades of yellow or green these may become difficult to distinguish when printed.

Font embedding: Why is it so important?
In the following notes we explain why your proceedings article PDF file needs to have all fonts embedded by you, the author, prior to sending it to your proceedings editor.

AIP Publishing performs a number of technical quality checks on all PDF files submitted to us for proceedings publication. During those checks we continue to encounter PDFs that do not have all (or any!) fonts embedded. This can result in publication delays while we seek replacement files from those authors. It is, of course, possible to re-process PDFs in an attempt to embed missing fonts, but those processes frequently fail or produce clearly incorrect results. For highly complex PDFs containing scientific and mathematical content, any attempt to "force" font embedding (by re-processing PDFs) is *very far from ideal and not without risk.* Very subtle errors can be introduced through complexities arising from issues such as font encoding. These errors can be exceptionally difficult to detect.

As the author and creator of your article PDF, you have the most intimate knowledge of *exactly* what the PDF should display. We ask all authors to carefully check their article PDF prior to submission. Perform visual inspections to detect subtle font errors and ensure that all fonts are embedded. With the wide range of tools and software that authors use to create PDFs, and the number of devices and platforms which readers use to view/print them, font embedding by authors is not a "nice-to-have," it is *essential*.

Why should I care about font embedding?
Embedding fonts into your PDF file is critically important for two reasons:

(1) Commercial printing companies are unable to print PDFs without the correct fonts being embedded.
(2) To ensure that your online article PDF file displays and prints correctly for everyone who wants to read your work.

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Font embedding: Ensuring portable PDFs
PDF stands for *Portable Document Format* and it is the word *Portable* that needs to be understood and interpreted with some care. It is tempting to think "Portable" implies that all PDF files, however created, are by default *fully portable* and will *always* display or print identically. Unfortunately, life is not quite that straightforward for one simple reason: *fonts*.

Any application or device used to view or print the text and mathematics contained in your article PDF will need access to the appropriate font data—which typically comes from two "sources":

(1) The PDF file itself: A process called *font embedding*—which is the only way to guarantee true portability.
(2) Substitute fonts installed on the device on which the viewer application is running.

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A PDF-viewing application may try its best to find "correct" substitutes for any fonts which are not embedded—this might work well for simple text, but for mathematics or specialized symbols it is quite likely that it will fail: perhaps spectacularly, or in much more subtle ways. Your carefully prepared mathematics might appear "garbled" or fail to display at all; random characters might be missing when viewed or printed; or, perhaps worse, incorrect symbols are substituted, making it appear that your mathematics contains errors!

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Tip: A simple test is to forward your article PDF to another device and view it there—such as on a smart phone or tablet where the PDF-viewer application and installed fonts may be very different to those on your desktop computer.

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With the huge variety of software tools available to authors it is difficult to provide comprehensive advice but here are some diagnostic tips.

- **Copying and pasting graphics** (Microsoft Word, or other word processors). Depending on how you generate the article PDF, it is possible that some fonts for the text within your pasted graphics were not embedded into the final PDF. A simple test is to paste a graphic into a new blank Word document, make a PDF and check to see if the fonts are embedded.
- **PDF or EPS export**: It is quite possible that some of your PDF or EPS graphics files do not contain the font data needed to render/display the text inside them. By default, many graphics tools or applications export PDF or EPS files that fail to embed font data so you should explore any file export settings (or configurations) to determine if your graphics application can be made to export font data.

Font subsetting: What is that?
Suppose you have a document with single page containing just the text "Hello World" formatted using, say, the Times Roman typeface: How many unique characters are required to display the text Hello World? Of course, the answer is 8: H, e, l, o, W, r and d (plus space "character"). However, a font file for Times Roman might contain data (glyph descriptions) to display hundreds, perhaps thousands, of characters: You only need 8 of them to display Hello World. Out of the total *set of characters* provided by a Times Roman font, only a tiny fraction, or *subset,* is required to display your document. When you go on to create a PDF file from your document, the PDF-creation software needs to *embed* just a small *subset* of characters in the Times Roman font to display (render) the Hello World text.

Modern font files (e.g., OpenType) contain data (glyph descriptions) to display many thousands of characters, resulting in large font files (potentially many megabytes). Font subsetting reduces the size of PDF files and, in reality, many font licenses insist that the *entire* font is not allowed to be embedded in a PDF. In practice, you rarely need to worry about font subsetting because your PDF-generation software does it for you automatically.

If you have further questions please contact us at confproc@aip.org

Best wishes
The AIP Conference Proceedings team