

Snapshots of modern mathematics from Oberwolfach

Guidelines for Authors

Thank you for agreeing to write a snapshot of modern mathematics. The snapshot project is designed to promote the understanding and appreciation of modern mathematics and mathematical research among an interested public world-wide. Please find some useful information for writing a snapshot below. Please do not hesitate to contact us via snapshots@mfo.de in case you have any questions or comments.

1. What is a snapshot?

A snapshot of modern mathematics from Oberwolfach is a short text (approx. 4-8 A5 size pages) that explains a mathematical problem or idea that is related to a scientific program at the MFO. It is targeted at a general audience consisting of advanced high school and undergraduate students, mathematics teachers and instructors, science journalists, and other individuals interested in modern mathematics. It can be written in English or German. The snapshot will be published online under the terms of a Creative Commons license in order to make it freely accessible to everyone who is interested in mathematics.

Feel free to have a look at the published snapshots on <http://www.mfo.de/snapshots>. For your convenience, a (not necessarily complete) list of snapshot titles and abstracts can be found on this website, as well.

2. Who can write a snapshot?

Participants and groups of participants in the scientific programs of the MFO are invited to write a snapshot of modern mathematics with the consent of the organizers of the respective program. Having previous experience in mathematics communication with the general public (e. g. with high school students, science journalists, teachers, etc.) is preferable. If you are interested in writing a snapshot, please contact the organizers of your program.



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3. How will the snapshots be edited?

The snapshots are carefully edited by young mathematicians who have been trained to pay particular attention to accessibility and comprehensibility for the targeted audience. As part of the editing process, they will suggest additional examples and/or references, further explanations, or easier formulations. We also provide editorial support for the layout, and for English grammar and spelling. In Section 5 of this document, you will find some hints and suggestions for writing an accessible and understandable snapshot.

4. General procedure of submission, licensing and publishing

The publishing process of a snapshot usually runs through the following steps:

- a) The organizers of the scientific programs of the MFO nominate up to three volunteering participants or groups of participants as authors of snapshots.
- b) As a nominated author you receive an easy-to-handle LaTeX template for your snapshot from the MFO.
- c) You submit your snapshot draft with all necessary files (pdf, tex, bib, images, and potentially source code files for executable programs) via email to snapshots@mfo.de, preferably within 2-3 months after your program at the MFO.
- d) Our editorial team selects from the incoming manuscripts those that are most suitable for our target audience.
- e) Our editors start with the editing process. They pay particular attention to the accessibility and comprehensibility of the snapshot. They will send you an email with their suggested editorial changes within a few months.
- f) Once we have your approval for the editorial changes, we forward the snapshot to the organizer of your program to obtain the final approval for publication.
- g) We ask you to complete and send back a license grant form that authorizes us to publish the snapshot under a Creative Commons license.
- h) We publish the snapshot on our website at www.mfo.de/snapshots and on the participative platform for mathematics communication www.imaginary.org/snapshots. On both sites, everyone will be allowed to download and use the pdf of the snapshot, according to the Creative Commons license you

selected. We will advertise the snapshots in schools, mathematics museums and exhibitions, conferences, and general interest media.

- i) The tex-file and all other source files will be permanently stored by the MFO and IMAGINARY. They will be made available to translators for the purpose of translations into other languages (provided that the license you select permits translations). The MFO and IMAGINARY will also store your email address, in case it should be necessary to contact you again after publication. However, we will neither publish your email address nor give it out to third parties without contacting you beforehand.

5. Hints and suggestions for writing a superb snapshot

Keep your audience in mind

When planning and writing your snapshot of modern mathematics, it is very important to keep your future audience in mind: the youngest readers will be advanced high school students who do not yet have experience with abstract mathematics. You cannot assume familiarity with many mathematical concepts. As a rule of thumb, it might help to recall what you knew when you were in the earliest stages of your mathematical interest.

Reduce complexity

We understand that it will hardly be possible to fully explain the ideas being discussed in your field at the level of the readers. However, we hope that you will be able to identify one or a few interesting aspects or general themes that can be explained. Try to focus on the main concepts and omit details that may puzzle your readers. Rigor and completeness will be less central than understandability and accessibility.

If you would like to label ideas where you are being slightly sloppy, we suggest you use phrases like the following: “The main idea is...”, “Neglecting some details,...”, “A good picture of the situation is...”

Trigger prior knowledge and capture the reader

Try to find an intersection of knowledge between you and the target group and build on something they might know. Maybe you can find a good metaphor for an idea you want to explain? Or can you think of an everyday analog or example of some concept or phenomenon from your field? Again, you might find it useful to picture someone specific such as your children, your favorite high school teacher, or your first year students, and try to get across to them what your research field



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is all about. What would fascinate or surprise them? What would you like them to take away?

If the material you present has interesting applications or connections to other areas, we would be delighted if you mentioned these in your snapshot – be it in the form of a short paragraph, a reference, a web link, or a picture. If your snapshot focuses on applications of mathematics, please make sure to also present (some aspects of) the mathematics involved, as our readers are very curious to learn about the mathematical methods, as well.

Take the readers by the hand

It might help to think of your snapshot in terms of a storyline and literally guide your readers through your ideas. Remember that one small step in your accustomed line of thoughts might represent a large jump for non-mathematicians. Try to ensure that the steps through your storyline are small enough for your readers to follow them. Also, try to avoid dramatically changing gears. If you need to make a leap, tell the readers how they should bridge the gap: Are you generalizing something you explained before? Which aspects remain central, which are given up? What picture should the readers have in mind?

Introduce relevant terms and concepts

If it is necessary to build on terms or concepts that might be unfamiliar to your readers, please try to give them an idea of what you are talking about in one or two extra sentences or in a footnote¹. Your readers might also be grateful if you provide web links or references with further useful information.

Present your thoughts in a simple, short, vivid, and structured way

Your readers are probably not familiar with reading scientific texts. Besides, they might not be native speakers of English. Therefore, your readers will find it easier to understand your snapshot if your formulations are

- simple, which means using common terms and sentence structures.
- short, which means using short sentences with few subordinate clauses

¹if the text is easier to read without immediate attention to the comment or explanation.

- vivid, which means providing examples and metaphors, using active rather than passive formulations, and expressing your thoughts with verbs rather than with nouns.
- structured, which means providing an overview and a summary, and dividing the text into sections with meaningful subheadings.

Illustrate your ideas

Appropriate illustrations or photographs could enhance your explanations – feel free to add them. Please make sure that you hold the relevant copyrights and give all necessary credits if you use illustrations or photographs produced by others, in particular if you download them from the world wide web. You will find examples for giving adequate credits in the LaTeX template. Also, please feel free to ask us via snapshots@mfo.de. If you are using your own graphics which have already been published elsewhere, please also check with your publisher whether you are allowed to reuse them for the snapshot or modify them to make them distinct.

Adhere to our template

When designing our LaTeX template, we took care of good readability and a well-arranged layout. Therefore, please do not change the layout of the template. In case you have any difficulties with our template, please do not hesitate to contact us.

More suggestions for writing about mathematics for a wide audience can be found in the NOTICES OF THE AMS Communication Article by Carla Cederbaum and Andrew Cooper.

6. Imprint

“Snapshots of modern mathematics from Oberwolfach” is a project of the Mathematisches Forschungsinstitut Oberwolfach in cooperation with IMAGINARY – open mathematics.

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