

SciPost

A community-run online scientific publication portal

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Abstract

SciPost is a novel scientific publication portal. It is purely online-based, and offers freely, openly, globally and perpetually accessible science. Being managed and run by professional scientists and making use of editor-solicited and contributed reviews according to the peer-witnessed refereeing process, its Journals aim at the highest achievable standards of refereeing. SciPost Commentaries allow Contributors to seamlessly comment on all existing literature. SciPost Theses offers a searchable collection of links to research theses (Master's, PhD, Habilitation). This document describes the initiative, its implementation and its motivations.

1 Introduction

The world of scientific publishing is currently undergoing tectonic changes, originating from the conjuncture of the appearance of a global internet infrastructure and from the increasingly vocal desire of having the results of society-funded scientific research be universally freely available. These facts have among others led to the development of the Open Access model, which is in the process of transforming scientific publishing as we know it. Many professional scientists have however expressed reservations about the realization of the Open Access model, two examples being: the currently ongoing ‘double-charging’ (whereby traditional journal subscription costs are still being paid by institutions but authors must now additionally pay publication charges for each accepted paper) and the quality-damaging incentive for publishers to disregard negative reports to facilitate cashing in on the publication charges. These and numerous further issues undermine many of the otherwise positive aspects of the initiative. It is thus not clear that the current developments in the world of publishing truly are in the best interests of science, the people who make it, and the people who use it. It however remains clear that an ideal world contains a freely, openly and globally accessible scientific publication portal.

Besides cost and accessibility issues, many practising professional scientists feel that the traditional refereeing process itself suffers from a number of limitations: the choice of referees is exclusive to Journal editors; only up to a handful of referees are usually consulted; the best potential referees are not necessarily chosen; one cannot, as a specialist, volunteer to report on a paper (manuscript shortcomings are thus very often not flagged before publication); closed-door blind refereeing, with reports viewable only by editors and (anonymously) by authors, is not fully accountable (referee reports are thus often of low quality); refereeing work is not credited (the quality of reports thus further suffers from a lack of incentive for those contributing them).

For members of the scientific community, yet another problem is that there exists a ‘potential barrier’ to cross when wanting to comment on existing publications. All scientists are aware of the current form of comments on articles; these are however reserved for rather critical pieces necessitating a substantial time investment. While sometimes entertaining, traditional comments do not offer sufficient flexibility to cover all desirable types of complementary content to a paper. Instead, online discussion boards provide a template for what is now possible using the web: extended commentaries on publications, with contributed additional material such as textual comments, rederivations, objections, links to related literature, etc. Like all good things in life, all

scientific papers undergo an ‘ageing’ process whereby their true value only becomes transparent over an extended period of time. The original publication cannot by itself reflect that process, and therefore needs an extra ‘layer’ growing on it after publication.

Another facility which is currently missing concerns the research theses which have been and are continuously being produced by students. Although individual institutions have made great efforts in recent years to provide user-friendly repositories, these are most often limited to a single institution and do not permit a worldwide blanket search for theses relevant to a certain research subject matter.

The context having been briefly summarized (there is, admittedly, much more to say, but let us move on in the interest of brevity), let us now present the basics of the proposed initiative.

1.1 Guiding principles

SciPost is a new scientific publication portal aiming to address the shortcomings of the current publishing landscape. The guiding principles in the conception, implementation and administration of SciPost are:

Two-way open access Publicly-funded science should be openly accessible to scientists and the general public, perpetually, worldwide. Conversely, scientists should not have to pay publishing charges to disseminate the fruits of their research efforts.

Non-profit Academics do not perform research for profit, and by extension the publication of their scientific results should not involve commercial profit-making.

By professionals Scientists should carry the end responsibility for all stages in the scientific publishing process.

Peer-witnessed refereeing Scientific publications should undergo the stringest possible peer refereeing process, witnessed by the community instead of hidden behind closed doors.

Accountable and credited refereeing Peer refereeing should be accountable, and should be incentivized by being credited.

Post-publication evaluation Peer evaluation does not stop at the moment of publication.

The first principle is reflected in the fact that all publications and related content on **SciPost.org** are accessible to anybody with an internet connection. Moreover, publishing in SciPost entails no author charges.

The second principle is reflected in SciPost’s not-for-profit status. SciPost is to be financially backed by national granting agencies, universities, societies, foundations and individuals.

The third principle is implemented by having only active scientists involved in SciPost’s decision-making and editorial processes.

The fourth and fifth principles are implemented using SciPost’s maximally stringent peer-witnessed refereeing process, and by the use of Contributor Ratings.

The sixth principle is implemented in the form of Commentary Pages associated to publications. These can either be SciPost Publications, or papers published elsewhere.

The features mentioned here are described in detail below.

2 Description

SciPost.org consists of three main trunks: SciPost Journals (and their associated Submissions), SciPost Commentaries and SciPost Theses. Each of these trunks is built from various types of content.

2.1 Journals

SciPost offers a collection of online scientific Journals. Each published paper is given a unique DOI identifier. Publications in SciPost Journals will be taken into account in the usual citation metrics. All Journals process and review their Submissions according to SciPost's principle of peer-witnessed refereeing. All SciPost Journals are open access in the true and full meaning of the expression, *i.e.* two-way, with no subscription charge for readers and no publishing charge for authors. All SciPost contents are licensed under the Creative Commons Attribution License (CC BY). Under this license, authors agree to make their articles available for reuse without permission or fees, for virtually any purpose. Anyone may copy, distribute or reuse these articles as long as the author(s) and original source are properly cited.

2.1.1 SciPost Physics Journals

In the field of Physics, SciPost offers the following Journals:

- SciPost Physics Select
- SciPost Physics Letters
- SciPost Physics X
- SciPost Physics
- SciPost Physics Lecture Notes

SciPost Physics Select publishes Letters of superlative quality in the field of Physics. Authors cannot submit directly to this Journal; SPS papers are editorially selected from the most outstanding Submissions to SciPost Physics Letters.

SciPost Physics Letters publishes outstanding-quality, broad-interest letters in all fields of Physics. There is no length requirement but all Letters should be written in a maximally concise comprehensible style.

SciPost Physics X publishes articles of superlative quality in the field of Physics. There is no limitation on length. As per SPS, authors cannot submit directly to this Journal; SPX papers are editorially selected from the most outstanding Submissions to SciPost Physics.

SciPost Physics is a multifaceted journal publishing high-quality research in the domains of Experimental, Theoretical and Computational physics. As a whole, the Journal publishes papers in the following specialties:

- A: Atomic, Molecular and Optical Physics
- B: Biophysics
- C: Condensed Matter Physics
- F: Fluid Dynamics
- G: Gravitation, Cosmology and Astroparticle Physics
- H: High-Energy Physics
- M: Mathematical Physics
- N: Nuclear Physics
- Q: Quantum Statistical Mechanics
- S: Statistical and Soft Matter Physics

SciPost Physics Lecture Notes publishes high-quality, research-level didactic material in all domains and specializations of Physics.

2.2 Submissions

The whole editorial workflow occurs online. Here follows a summary of the overall procedure.

2.2.1 Submission to SciPost

To submit an article for publication in a SciPost Journal, authors must:

- Prepare their manuscript using the SciPost LaTeX template (available at [SciPost.org](https://www.scipost.org))
- Make the preprint publicly available on arxiv.org
- After appearance on arxiv.org, fill the SciPost Submission form, selecting which SciPost Journal to submit to and providing domain and speciality specifications.

2.2.2 Editorial workflow; peer-witnessed refereeing

All incoming Submissions to SciPost Journals are peer-reviewed using SciPost’s peer-witnessed refereeing process, implementing the highest standard of refereeing available. The precise procedure follows this pattern (the various types of Editors are described in the next section):

- A member of the Editorial College is internally selected and becomes Editor-in-charge of the manuscript. A Submission Page is activated (this is similar to a Commentary Page, but with Reports also enabled), and is immediately open to Contributor Comments and Author Replies, all of which are vetted by the Editor-in-charge of the submission.
- The Editor-in-charge starts a refereeing round (whose duration depends on the Journal, see below), inviting specific Contributors to provide an Invited Report.
- During a refereeing round, registered Contributors to SciPost can volunteer a Contributed Report.
- During the refereeing round, authors can continuously provide Replies to Reports and Comments.
- At the end of the refereeing round, Reports, Replies and Comments are assessed by the Editor-in-charge, who formulates an editorial recommendation and forwards it to the Editorial College, which takes the editorial decision by majority vote of the relevant specialty’s Editorial Fellows.
- The editorial decision is communicated to the Authors by the Editor-in-charge. This consists in either a publication offer, request for resubmission (with minor revisions, or major revisions (leading to another refereeing round)), or rejection.
- The Authors can respond to the editorial decision by accepting an eventual publication offer (in which case the Submission Page and its contents are moved to a SciPost Publication Page), by revising their manuscript and resubmitting to SciPost (in which case a new Submission Page is opened, retaining a link to the previous version’s Submission Page), or by withdrawing their Submission (in which case the Submission Page is deactivated and all its contents removed from public view).

The duration of refereeing rounds depends on the Journal: 3 weeks for Letters, 4 weeks for traditional articles, and 8 weeks for Lecture Notes.

2.3 Commentaries

SciPost Commentaries is a separate section of the SciPost.org site, and consists in a collection of Commentary Pages, each page concerning an individual scientific publication (this can either be a published paper in any journal, or an arXiv preprint¹).

Each Commentary Page is headed by a summary of the relevant publication (title, author list, abstract, link to the official published version²), followed by Comments. Each individual Comment can be replied to by authors of the publication under discussion. Replies to Comments from non-author Contributors appear as separate Comments (with ‘in reply to’ specification). Comments and Replies can be submitted in anonymized form if desired.

All content on the Commentary Page can be rated, from the original publication down to all Comments and Replies.

2.4 Theses

SciPost Theses is also a separate section of SciPost.org. Somewhat resembling Commentaries, it offers a searchable collection of Thesis Link pages, each page representing a thesis (Master’s, PhD or Habilitation). The link offered is a URL pointing to an external institutional repository (SciPost does not store the theses themselves). As per Commentaries, Theses can be commented upon and rated.

Thesis Link pages can be requested by any Contributor by filling in the Thesis Link request form on the site. The requests are then processed by the Editorial College.

2.5 Ratings

All SciPost content can be rated in one form or another. Ratings can only be contributed by registered Contributors, and each Contributor is limited to one Rating of a given object. The details of the types of Ratings vary depending on whether a SciPost Journal Publication, Submission, Report, Comment or Reply is being rated. Ratings are back-end aggregated into a Contributor’s individual Ratings. These aggregate Ratings are publicly available: one can thus view a particular researcher’s number of Reports, Comments and Replies and their associated aggregate ratings, thereby incentivizing Contributors to provide high-quality contributions.

2.6 Organizational structure of SciPost

2.6.1 The SciPost Foundation

The SciPost Foundation (Stichting SciPost, registered in Amsterdam) forms the underlying legal entity. It is a nonprofit charitable organization dedicated to developing, implementing and maintaining innovative forms of electronic scientific communication and publishing. The SciPost Foundation operates the SciPost.org interactive online portal for the benefit of the international scientific community and further interested parties. Its personnel, which is non-remunerated, consists in Prof. J.-S. Caux (chairman), Dr J. van Mameren (secretary) and Dr J. van Wezel (treasurer).

2.6.2 Advisory Board

The SciPost Advisory Board is composed of preeminent professional scientists. Its task is to offer advice on all aspects of SciPost’s activities and development strategy.

¹In order not to interfere with the refereeing process of other journals, a Commentary Page for a non-SciPost-submitted arXiv preprint can only be opened at the earliest 8 weeks after the appearance of the preprint on the arXiv.

²SciPost.org does not operate as a repository, and only provides external links to non-SciPost published papers.

2.6.3 Executive Board

The Executive Board is composed of an Executive Director and a number of officers with predefined supervisory tasks. These include Membership, Web maintenance and development, Finances, Legal, Ethics, Submissions, Journals and Commentaries. All Executive Board members are appointed by the Foundation.

2.6.4 Editorial College

The SciPost Editorial College is a virtual community of Editorial Fellows, whose core responsibility is to run the peer-witnessed refereeing for all SciPost Journals.

2.6.5 Editorial Fellows

The running of SciPost’s peer review system is performed by members of the Editorial College, namely the Editorial Fellows. All Editorial Fellows must be active tenured professional scientists. The responsibilities of Editorial Fellows are:

- to volunteer to take charge of incoming Submissions in their field/domain/specialty
- to run the peer-witnessed refereeing process for Submissions for which they are Editor-in-charge
- to vet Reports, Comments and Replies associated to Submissions for which they are Editor-in-charge
- to formulate an editorial recommendation at the end of the refereeing rounds they run
- to cast votes on editorial recommendations in their specialty
- to vet Commentary Page requests, Thesis Link requests, Comments and Replies for the Commentaries and Theses section of the portal.

Editorial Fellows are chosen among active researchers covering the various relevant scientific specializations. They are appointed in sufficient numbers such that the workload for each individual Fellow is minimal (the norm being to handle one Submission per calendar month on average, representing approximately a half-day of work).

Appointments Editorial Fellows are appointed by the Foundation for a period of two years, renewable. Their identities are made public on scipost.org. All Editorial Fellows must be registered Contributors.

2.6.6 Contributors to SciPost

All SciPost contents are built by practising professional-level scientists. In order to register as a Contributor, one must be employed as researcher by an officially recognized higher education academic institution. Staff members, tenure-trackers and postdoctoral researchers can register by directly filling the online registration form. Doctoral students must be endorsed by their supervisor (who must themselves be registered). Master’s and Bachelor’s students cannot register, nor non-research university staff or members of the general public. All registrations are internally vetted before activation. The registration request will be processed once the required personal data is provided and the email address is confirmed.

2.6.7 General public

All interested parties from the general public have full access to SciPost contents (Journals, Submissions, Commentaries, Theses) without need for registration. Non-Contributor readers can however not submit any Comment or Rating, and cannot view any aggregated data on Contributors.

2.7 Anonymity rules

After vetting by the relevant Editor, Reports, Comments and Replies appear on scipost.org. Contributors can opt to have these appear in anonymized form (the default standard is that Reports are anonymized, Comments and Replies are not). The Executive Director however always has in-app access to contributors' identity, as well as the relevant Editor-in-charge.

2.8 Relationship to arxiv.org

The arxiv.org preprint server, ever since its inception, has been performing an exceptionally praiseworthy service for the scientific community. In particular, it has accelerated scientific communication and collaboration in an unparalleled fashion. ArXiv defines itself strictly as a preprint server, and it is the strict adherence to this simplicity of purpose which has allowed it to be so successful. ArXiv is and will remain the complete solution for preprint public-making.

SciPost builds on arxiv.org, seamlessly using it as its preprint-holding repository. The first step to submit a manuscript to a SciPost Journal is thus to make it available online at arxiv.org. SciPost however aims at complementing arxiv.org in two ways. First and most importantly by (in a sense) doing for referee reports what the arXiv has done for preprints: make them publicly available, and going further by in fact replacing traditional blind refereeing with SciPost's more stringent peer-witnessed refereeing process. Second, SciPost overlays arxiv.org by offering its Commentary Pages portal, in which complementary content can be built on existing publications and (non-SciPost submitted) preprints.

3 Support

SciPost relies on the scientific community for providing all its contents, from submitted manuscripts to Reports, Comments and Replies. The Editorial College, composed exclusively of practising professional scientists, is responsible for all editorial activities.

The [SciPost.org](https://scipost.org) website is developed and maintained by the founder J.-S. Caux, with technical advice from a small team of programmers.

3.1 Long-term support

The activities of SciPost are endorsed by the Netherlands Organization for Scientific Research (NWO). All articles published in SciPost Journals in particular fulfill the Gold standard Open Access requirements of the NWO, as stipulated on the organization's Open Science web page.