

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. 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 many other 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.

1.1 Guiding principles

The guiding principles in the conception, implementation and administration of SciPost are:

- scientific publications should undergo the stringest possible peer refereeing process
- peer refereeing should be accountable and credited
- publicly-funded science should be openly accessible to scientists and the general public, perpetually, worldwide
- peer evaluation should not occur exclusively pre-publication

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

The third principle is reflected in SciPost’s not-for-profit status, financially backed by the support of national granting agencies, universities, foundations and individuals.

The fourth 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 two main trunks: SciPost Journals (and their associated Submissions) and SciPost Commentaries. Each of these trunks is built from various types of content.

2.1 Journals

SciPost offers a collection of online scientific Journals. All Journals process and review their Submissions according to the principles of peer-witnessed refereeing. All SciPost Journals are truly open access, without any subscription charge for readers. All SciPost contents are licensed under the Creative Commons Attribution 3.0 License.

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 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 papers in all fields of Physics.

SciPost Physics X publishes high-quality papers covering cross-domain/cross-disciplinary research in Physics.

SciPost Physics is a multifaceted journal publishing high-quality specialized 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

2.1.2 Submissions

To submit your article for publication in a SciPost Journal, one must:

- 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.

Note that you cannot submit directly to SciPost Physics Select. Submissions to SciPost Physics Letters deemed of superlative quality will be editorially promoted to SciPost Physics Select.

2.1.3 Peer-witnessed refereeing

All Submissions to SciPost Journals are peer-reviewed using SciPost’s peer-witnessed refereeing process, implementing the highest possible standard of refereeing. The precise procedure differs slightly between SciPost Journals but follows this pattern:

- A SciPost Submission Page is activated for the Submission (this is similar to a Commentary Page, but with Reports also enabled). This page is immediately open to Contributor Comments and Author Replies.
- An Editor-in-charge starts a Refereeing round, inviting specific Contributors to provide an Invited Report.
- During a refereeing round, registered Contributors to SciPost can volunteer a Contributed Report.
- Authors can continuously provide Replies to Reports and Comments.
- At the end of the refereeing round, Reports, Replies and Comments are assessed by SciPost Editors, and an Editorial decision is taken.
- The Editorial decision 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, or by withdrawing their Submission (in which case the Submission Page is deactivated and all its contents removed from public view).

2.2 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 preprint).

Each Commentary Page is headed by a summary of the relevant publication (title, author list, abstract, link to published version¹), 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 are anonymized.

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

2.3 Content categories

All content on SciPost falls into one of the following categories:

- Publication
- Submission
- Commentary

A Publication is a manuscript which has been accepted as a publication in a SciPost Journal after undergoing (potentially more than one round of) peer-witnessed refereeing.

A Submission is a manuscript under consideration for publication in a SciPost Journal.

A Commentary is the collection of contributed material associated to a manuscript: Reports (for SciPost Publications and Submissions), Comments, Replies and Ratings.

All content contributed to SciPost undergoes editorial vetting before being posted, and is licensed under the Creative Commons Attribution 3.0 License.

2.3.1 Ratings

All SciPost content can be rated in one form or another. Ratings can only be contributed by registered Contributors, and each Contributor can only provide one Rating to 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.

2.4 Contributors to SciPost

All SciPost contents are built by practising professional-level scientists. From the top down, the following layers can be defined:

2.4.1 Advisory Board

The SciPost Advisory Board is composed of preeminent professional scientists. Its task is to advise the Executive Board on all aspects of SciPost’s activities, and to make recommendations for SciPost Journals Editors-in-chief.

2.4.2 Executive Board

The SciPost Executive Board is composed of the Lead Editor and all Journal Editors-in-chief. It takes responsibility for the implementation of SciPost.org and supervises all its activities.

¹SciPost.org does not operate as a repository, and only provides external links to published papers.

2.4.3 Editors

The bulk of the behind-the-scenes work in the day-to-day running of SciPost is performed by the editorial team. This consists in Editors of varying rank. The Lead Editor has overriding responsibility, and is also responsible for vetting of Contributor registration requests. Each SciPost Journal has a team of three Editors-in-chief, with ultimate decisional power for that particular journal. Additionally, each Journal has a team of Journal Editors, who are responsible for handling the relevant Submissions, running the peer-witnessed refereeing process and taking editorial decisions on publication. Lead, Chief and Journal Editors are named on the SciPost website.

There is additionally a team of Commentary Editors, responsible for vetting Commentary Page requests, Comments and Replies for the Journals and Commentaries section of the site. Each team of Editors is composed of researchers covering the various relevant scientific specializations. Commentary Editors' names are not published.

2.4.4 Contributors

All content on SciPost is built by professional scientists. All active scientists from PhD level upwards, working at a known university or research institute, can request to become a Registered Contributor by filling in the relevant online form. After editorial vetting, permission is granted to submit content in the form of Submissions, Commentary Pages, Comments and Replies. Promotion to Editorial status is by invitation from the relevant Board.

2.4.5 General public

All interested parties from the general public have full access to SciPost contents (Publications, Submissions, Commentaries) without need for registration.

2.5 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. The editorial team, composed exclusively of practising professional scientists, is responsible for all publication-related activities.

The SciPost.org website is developed and maintained by the founder J.-S. Caux, with technical help from a small team of programmers. The server infrastructure is initially provided by the University of Amsterdam.