

Electronic access to journals: the views of the American Physical Society

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The American Physical Society

The American Physical Society (APS) publishes the highly respected journals, *Physical Reviews*, *Physical Review Letters* and *Reviews of Modern Physics*. These amount annually to some 14,000 peer reviewed papers, selected from around 24,000 submitted articles. The journals are all available online, as might be expected in the electronically savvy physics community. Subscribers to a print journal automatically have access to the electronic versions, while users may also subscribe to online versions alone at a lower price. The APS is a not-for-profit society, and the prices of its journals, on a per character basis, are among the lowest of any journal. But we are also a not-for-loss organization, and we seek to recover costs.

We have a [liberal copyright policy](#) that in effect makes all content available free, before, during, and after publication, at the discretion of authors. Although we hold copyright on articles, we do so only to ensure that we are able to do what we wish with them. In practice, authors retain all the rights that they would have were they themselves to hold copyright. They can, for example, permanently post their articles on eprint servers -- the most well known of which is perhaps the [Los Alamos eprint archive](#) established by Paul Ginsparg (an archive which the APS mirrors) - and update these with changes made after peer review and publication. Authors may also post the APS formatted version of an article on their personal web pages, and in doing so make it freely available to all.



This copyright policy has enabled us to invest in scanning all the back archives of our journals. At the time of writing, we have digitalized all journals as far back as 1960, and we expect to scan every article, right back to 1893, by the end of June. These electronic archives also provide reference linking and searching of full text. This exercise is not without costs -- we have invested several million dollars in this -- and in keeping with our no profit/no loss policy, we must recover these. We therefore charge a modest fee for access to this archive, which when complete will replace around 80 linear metres of library shelf space, and include more than 200,000 articles.

Although individual APS articles are therefore freely available at the discretion of their authors, there is nothing we would like better than to have our entire archive and current content (defined as the last three years plus the present year), searchable and linked, and fully available throughout the world without charges or barriers.

Advancing and diffusing knowledge of physics is our business, and to this end we make our abstracts freely available. We encourage and facilitate linking, and we recently introduced what we feel is a more equitable, differential pricing scheme, that promotes broader access, by allowing smaller institutions to pay less for subscriptions than larger organizations.

We are also experimenting with a 'free' journal, *Physical Review Special Topics: Accelerators and Beams* (PRST-AB), that is only available in electronic form. We are able to offer this free to individuals and libraries, because its costs are paid for by a consortium of national and international laboratories. This is an exception, however, and to cover our costs we are otherwise still stuck with the subscription - or 'reader pays' - model; one which is unsatisfactory in many ways. Libraries and others have suggested that costs could instead be covered by requiring authors to pay for publication, but in our community, this does not seem to be a feasible option at present. A few years ago, we reinstated such page charges for one of our journals; the result was uproar among authors, many of whom decided to submit their articles instead to a much higher priced journal that did not have page charges.

The costs that must be met are appreciable. Peer review is expensive, and although reviewing by scientists is voluntary, we need to pay our editorial staff. It is more time consuming and hence more costly to review the 10,000 rejected articles than it is to review those that are accepted. Consideration is being given to other forms of peer review, but no savings are as yet obvious if quality is to be maintained. Similarly, maintaining an electronic archive brings additional costs. Some savings should soon become possible because we expect to be out of the print distribution business within five to ten years; institutions that want print copies will be able to download electronic copy and print and bind themselves. But the remaining costs will still need to be met.

A modest proposal: it is not solely the responsibility of learned societies to make these archives available without charge to the world at large. The institutions to which authors and readers belong also have responsibilities. We could make our complete archives available without charge today, if the institutions that now subscribe and pay fees instead became sponsors (as they are for PRST-AB), and made an annual contribution equivalent to that they now pay as a subscription fee. We would then be accountable to our sponsors for the efficiency of our operations. Inflation and the introduction of new services would regularly require increases in sponsorship contributions, however.

Some readers who are familiar with public television in the United States will be chilled by the spectre of a "pledge week", where programmes are interrupted by pleas for a financial contribution. Imagine that during one week twice a year, each request to download an article required the reader to watch five minutes of explanation on why contributions are necessary, together with an urgent request for more. Pledges by institutions would of course provide a reprieve from pleading, perhaps a complete reprieve.

To paraphrase President Kennedy: "Ask not just what we can do for you; Ask rather what we can all do for one another."