

Research Notes

Conference Proceedings in Physics

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A growing fraction of science libraries' acquisitions, both monographs and journals, are proceedings of conferences. This research note examines the impact of these publications on an academic physics library. A particular concern is the publication of proceedings in journals.

PROLIFERATION OF CONFERENCES

The rapid growth of the scientific literature and the increasing cost of journal subscriptions have resulted in a financial crisis for most science libraries. Libraries have had to cancel journal subscriptions and may not have enough funds to maintain their collection of monographs. The proliferation of conference proceedings aggravates this crisis. In this note, *conferences* is used to include all types of meetings, such as congresses, workshops, symposia, seminars, and summer schools. *Proceedings* refers to the publication of the full text or a condensed version of papers presented at such meetings. The regular meetings held by the national professional societies in many countries are not of concern here. They do not generate proceedings although brief abstracts of the papers that were presented may be published in the transactions or newsletters of the scientific society.

The discussion will be limited to the field of physics. There are, however, many areas on the border with other

sciences, such as astronomy, chemistry, or engineering, in which the decision as to whether to include a conference had to be arbitrary.

The listing of conference proceedings in Volume 25 of the Science, Engineering, Medicine, Technology (SEMT) part of *InterDok* contains about 3,200 published proceedings.¹ Of these, about 220 are in the area of physics.

The March 1991 issue of *Europhysics News* has an editorial entitled "Explosions." The editorial comments on the proliferation of conferences. "Explosions of one sort are thankfully over . . . [this refers to the end of the Gulf War]. Our explosions are nearer home. The European Physical Society database now contains 570 meetings . . . of interest to European physicists in 1991 . . . a dramatic increase."² This means eleven meetings are held per week. Since there are about a dozen subfields of physics, such as atomic physics, nuclear physics, particle physics, this amounts to one conference per week in each subfield. In the November 1989 *Newsletter of the Division of Nuclear Physics* of the American Physical Society (APS), Herman Feshbach,

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who was then the chair of the Commission on Nuclear Physics of the International Union of Pure and Applied Physics, writes that the commission "has been seriously concerned with the proliferation of meetings and workshops. Between April 1, 1989, and the end of the year there are at least 50 meetings, more than one per week scheduled." As another example, the June 1991 *Newsletter of the Division of Particles and Fields* of APS lists forty-three meetings during the period from the end of July 1991 to the end of 1991, approximately two meetings per week in particle physics.

NATURE OF PROCEEDINGS

One publisher produced one quarter of the physics conference proceedings listed in *InterDok*. Other publishers produced 10 percent or less of the total. About 10 percent of the sample were proceedings of NATO workshops. The cost of the individual proceedings varied from a couple of free volumes to a maximum of \$359. The highest cost per page was 50 cents, but for the typical proceedings the cost was around 15 cents per page, i.e., a typical volume cost \$60 and contained 400 pages.

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In this sample of physics conference proceedings, 19 of the proceedings were listed as published in journals, either in regular volumes or in special supplements. These tended to be the most expensive publications and included the proceedings that cost \$359 with a cost of 38 cents per page. None of the proceedings in this sample reached the cost of \$1.30 per page, which was reported in the *Newsletter for Serials Pricing* for the proceedings of a conference held in Poland in 1989.³

In most cases the date of publication of the proceedings was the year after the conference was held, although a number were published in the same year. In one instance, a five-year interval occurred between the date of the meeting and the publication date. In a fast-moving field the proceedings of conferences lose usefulness rapidly with time, since an increasing fraction of the papers will have been published also in journals.

Most proceedings are reproduced directly from typed contributions by participants although some proceedings published in journals are composed to the same standard as the rest of the journal. Proceedings usually contain both invited and contributed papers. Some of the invited papers in proceedings constitute important scientific contributions in that they summarize results obtained by many scientists, and they are often presented by the most knowledgeable workers in the field.

Contributed papers are usually brief, two to four pages. These are often preliminary announcements of results that are published later in journals, although there are many cases in which the preliminary short version in the proceedings in fact appears later than the complete paper. Papers are usually not refereed in the usual sense, i.e., they are not sent for review to referees not associated with the conference. All participants in a meeting are normally allowed to present at least one paper. Although there is often an official statement that all contributions are refereed, the organizer of a conference will rarely omit a contribution, unless it clearly does not fit the topic of the meeting. Consequently, the quality of the contributed papers appearing in conference proceedings is often inferior to that of regular journals, even if the proceedings are published in the same journal. Most proceedings do not have a subject index. Many do not even have an author index, which makes their use inconvenient.

Nonetheless many conference proceedings are essential resources for the research physicists. Many conference proceedings give an invaluable over-

view of the current activities in a given research area and provide a convenient source of references to published work and work in progress. Conference proceedings are consulted by most users of the physics library.

PROBLEMS FOR SCIENCE LIBRARIES

The problem for the library is to select from the hundreds of proceedings published every year the ones needed by the users of the library.

Meetings vary widely in the breadth of subject matter covered. In some broad subfields of physics, international conferences are held at regular, typically two- or three-year, intervals. Some symposia cover quite narrow areas of research. Proceedings of such highly specialized symposia would be of interest only to libraries at institutions in which there is an active research program in that specialty. When there is an active research program, the library may be able to get a copy of the proceedings from a participant.

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Decisions on acquisition of proceedings are more difficult than those pertaining to single-author books, since the proceedings may contain a small number of important papers by distinguished authors among many unimportant contributions. Usually even physicists working in the general area of the subject of a conference cannot evaluate the proceedings from the published announcement of their availability.

Libraries receive proceedings either by subscription to a series of proceedings issued by a given publisher, or by purchase of individual volumes, or as part of a journal subscription. A small number of proceedings are distributed free by government or international agencies, such as the Inter-

national Atomic Energy Agency. In a typical physics library, proceedings now constitute a large fraction of all monographs (in the authors' physics library the fraction is about one-third) and a substantial fraction of some journals.

PROCEEDINGS PUBLISHED IN JOURNALS

When the organizers of a conference seek a publisher, they prefer one who will make copies of the proceedings available to the participants at a low cost. The registration fee usually includes a free copy of the proceedings, but a high registration fee may reduce attendance. The publisher can agree to a low cost for participants if the cost of copies for sale can be increased, for example, by publication in a journal to which many libraries subscribe. This option makes the offer particularly attractive to the organizers and participants, since it guarantees a wide distribution of the proceedings and provides to the participants a journal reference, which makes the contribution more easily accessible.

Some physics journals, for example, the *Physical Review* and *Physics Letters*, publish no proceedings. Others, for example, the *Journal of Physics* and the *Journal of Applied Physics*, rarely publish proceedings. Some journals, such as the *Journal de Physique* and *Physica Scripta*, have separate supplements for proceedings. Some journals, such as the *Journal of Vacuum Science and Technology*, consist largely of conference proceedings. Most journals that publish proceedings do not offer the option of not subscribing to the proceedings, even if they are published as separate supplements. Exceptions are *Journal de Physique* and, since 1988, *Nuclear Physics B*.

The authors examined a sample of nine physics journals that published several proceedings during 1989. Five are published under the auspices of scientific societies, and four by commercial publishers. As far as the authors know, it appears that subscribers to these journals do not have a choice whether to receive the proceedings as part of the subscription. The subscription prices of the issues published

in 1989 in the journal were used. When the subscription price was given in a foreign currency, the January 1989 exchange rate was used to convert to U.S. dollars. When several subscription prices were given, the one applicable to the U.S. was chosen. Some subscribers may have been able to subscribe at a lower price because some publishers offer discounts to subscribers of several of their journals or to certain classes of subscribers.

There is only a small overlap between the proceedings listed in Volume 25 of *InterDok* and those published in 1989 in the journals examined by the authors, presumably because of the delay between publication of proceedings and their listing in *InterDok*.

Libraries may be forced to cancel subscriptions to expensive journals that contain conference proceedings, although they might be able to maintain the subscription, if they had the option of getting a subscription without conference proceedings at a lower cost.

Among the journals examined, the fraction of pages that contained proceedings varied from 21% to 80%. When the annual subscription price was multiplied by the fraction of pages containing proceedings, the cost assigned to proceedings varied from \$80 to \$2,400, with an average of \$670. Actually the cost per page of publishing proceedings is lower than that of the rest of the journal because there are usually no editorial costs and often no composition costs for the publisher. Nevertheless for journals for which the subscription price is based on

the number of volumes published during a year the number of pages in volumes containing only proceedings is usually about the same as that for volumes containing only directly submitted articles.

The cost per page varied by a factor of 21. The least expensive was the *Journal of Vacuum Science and Technology* at about 9 cents a page. The average cost per page of the journals published by commercial publishers was about four times that for journals published by society publishers, a result consistent with that found in a survey of chemistry journals.⁴ In some cases the subscriber receives conference proceedings published in journals at very low cost, in other cases the subscription price is a heavy financial burden for a library. Libraries may be forced to cancel subscriptions to expensive journals that contain conference proceedings, although they might be able to maintain the subscription, if they had the option of getting a subscription without conference proceedings at lower cost.

Because of the budgetary problems they face, many libraries need to restrict their purchases of proceedings to those of high interest to their user community. When the proceedings are published in a journal, libraries are forced to buy proceedings they would otherwise not have purchased. Subscribers should let the publishers know when this is a problem. Journals which publish conference proceedings should publish them in supplements and make the purchase of these supplements optional. Librarians should call this problem to the attention of scientists who use their library, especially scientists who are involved in the organization of conferences.

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