editorial

Indexing the physics literature

I invite your attention to the new *Physics and Astronomy Classification Scheme* (PACS) reprinted on pages 64–75 of this issue. Why do physicists need this scheme? How is it to be used?

Despite the technological sophistication of our new Current Physics Information program (magnetic-tape storage, computer-generated typesetting, microfilm copies and so on), we will always require human intellectual effort to determine not only what goes into the primary journals but how it shall be classified in the secondary data base. The new classification scheme is intended in the first place to be used by the authors of research papers themselves to classify their own papers. PACS is being used in this fashion now by all physicists and astronomers who send their abstracts to AIP for publication in *Current Physics Advance Abstracts,* which now includes some 80 of the world's most important physics journals.

AIP's Index Editor is in the process of merging into PACS the separate and disparate classification schemes used in the journals AIP publishes and incorporating feedback from AIP's member societies. The version of PACS printed here is the second edition and incorporates, for example, the detailed and specific recommendations received from a committee of the Chemical Physics Division of the American Physical Society. Similarly, the final touches are now being put on further changes in the area of acoustics with the active cooperation of the editors of *The Journal of the Acoustical Society of America,* and so on. When this process is complete, PACS will be used for the cumulative subject indexes of the journals. These, and other secondary information services such as *Current Physics Titles,* are generated by computer from the secondary data base SPIN. Already in 1972 PACS was used for the indexes of the *Journal of Applied Physics, Applied Physics Letters, Physics of Fluids, Journal of Mathematical Physics,* and *Journal of Vacuum Science and Technology.* Whenever PACS is used in an index, the computer weeds out the sparsely populated headings. Clearly a one-year index for the *Physics of Fluids,* for example, will need far fewer headings than, say, a 5-year cumulative index for all of *Physical Review.*

In an important sense, PACS will never be "complete," because physics is a dynamic science with constantly emerging new subfields. For this reason, the numbering scheme has been chosen deliberately to be flexible, and it is anticipated that PACS will be revised annually. (The 1974 version is now being prepared and will be made available later in the year.) This problem is particularly acute at the fourth fine-detailed level of the scheme, the usefulness of which can be questioned in some areas. However, even when the actual classifying of an article at this level is difficult or ambiguous, the existence of the fourth-level headings has been found to be essential to define the meaning and give the scope of the next highest third-level heading. Generally it has been found that, as familiarity with PACS is gained through use, the difficulties diminish and the chore of indexing becomes routine.

One further question about PACS is how it relates to other comprehensive classification schemes. Unfortunately at present there are many. Perhaps the one physicists have heretofore had most contact with is the scheme used in *Physics Abstracts,* which is published by The Institution of Electrical Engineers (IEE) in London in association with AIP. In this case, substantial concordance already exists; the two schemes are essentially in one-to-one correspondence except in some of the fine detail. AIP and IEE are in fact discussing the feasibility of merging their secondary data bases to avoid duplicate production costs. Compatibility of the classification schemes, which is certainly a prerequisite for merger, was one of the criteria that led IEE to adopt their present scheme in 1973. In addition to achieving compatibility, AIP and IEE hope to reach agreement on all details of numbering and wording so that physicists and astronomers across the world can become familiar with one and only one general comprehensive scheme. Please study the present scheme and let us have your comments.

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