

Thought would have to be given to preventing authors from "stuffing the ballot box" with favorable reviews by friends. One could easily construct algorithms to test for this sort of behavior; the fear of being publicly identified would then deter most authors from such schemes. A friend who *did* do such a "favor" would either have to be anonymous—and an anonymous favorable review would create immediate suspicion—or risk being asked to explain an obscure point in the paper a later, negative reviewer. In addition to rating the paper, reviewers could also be given the opportunity to anonymously rate the integrity of earlier reviews. All this could be taken into account in any decision based on the review data. Persons who repeatedly abused the system would be restricted to read-only access. The new system, while it could preserve anonymity when necessary, would have a degree of openness not possessed by the present system.

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4/92

Many of the negative respondents to David Mermin's proposal to modernize physics communications don't seem to realize that most of what is needed is already being done on a regular basis, and with a user base substantially larger than the physics community. Questions about hardware, software, viruses, access or how to pay have already been answered by information services such as CompuServe. Indeed, this commercial information service provides a good model for most of our needs.

Compuserve regularly provides subscribers with information in the form of text and graphics. The information is divided into hundreds of categories, each overseen by one or more experts in that field. Information from other users is available either in the form of streams of short bulletin board messages or as archived library files that have been previously examined by one of these experts. The experts also regularly serve as moderators and information sources for the bulletin board.

Physics certainly has special needs, such as a permanent archive. We would also benefit from software and hardware standards that would allow the convenient use of equations and chalkboard graphics in the bulletin board messages.

Those physicists who are not regular users of a high-quality information service almost certainly underestimate the improvement that would

result from such an overhaul of physics communications. For example, it is hard to exaggerate the importance of simply having a large number of experts accessing a common bulletin board on a regular basis. Electronically stored articles also greatly expand the document search and retrieval possibilities beyond anything offered by libraries.

My own opinion is that the rapid and public reaction to papers by various interested readers would quickly prove to be more effective than formal peer review. The resulting message stream (or a summary) could be associated with the paper. One would quickly learn to judge the value of an article by whether or not the authors were available to defend it and by how responsive they were to questions of methodology. For example, I doubt that the recent cold fusion fiasco would have lasted more than a day or two in the free-for-all of an interactive bulletin board. And it would have been good, clean fun!

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1/92

I would like to congratulate you for allowing David Mermin to publish "Publishing in Computopia"! Mermin introduces some radical ideas for a debate whose time has come.

I personally do not feel that there need be any paper grading system on Mermin's proposed bulletin board. I believe that the absence of a grading system will enhance our creativity. In my field of lasers, some exciting new developments—such as optical-Kerr-effect mode-locking and fiber lasers—are based in part on papers published 10–20 years ago, when their future importance was unsuspected by most.

Let the readers decide over a long period of time what is important. Citation journals will continue to give grant evaluators an objective measure of readers' interest.

I still would like you to publish PHYSICS TODAY, however. You have excellent contributors who help me tremendously in keeping up with the exciting new developments in physics and in related fields.

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5/91

Nuclear Recoil Spotted Spectrally

In his exciting account of prospects and progress in neutrino and dark matter detection with low-tempera-

ture detectors, Leo Stodolsky (August 1991, page 24) describes interesting manifestations of nuclear recoil observed with the use of thermistors.¹ Earlier, quantitative observations of nuclear recoil following radioactive decay actually exist, for which we thought it useful to give reference. In alpha-particle spectrum experiments started at CERN and the Institut d'Astrophysique Spatiale (Verrières-le-Buisson, France) in 1983, we placed a thin ²²⁴Ra radioactive source opposite our (windowless) low-temperature calorimeter.² The radioactive decay chain gives rise to the initial alpha particles from ²²⁴Ra and subsequent ones from ²²⁰Rn, ²¹⁶Po, ²¹²Bi and ²¹²Po. After the emission of an alpha particle it was possible for the daughter to recoil in the direction of our detector and get embedded in it. The spectral line from the ²²⁴Ra parent was single. Subsequent decays produced lines not only at the respective alpha-particle energies E_α but additional, satellite peaks shifted up by the recoil energy $(M_\alpha/M)E_\alpha$, where M_α and M are the masses of the alpha particle and of the alpha-emitting nucleus—in agreement with simple linear momentum conservation.³ In our more recent work,⁴ the alpha-energy resolution in the spectrum shown in figure 5 of reference 3 has been improved by approximately a factor of 4.

References

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