

# REVIEWS OF MODERN PHYSICS

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## Editorial

For 40 years the *Reviews of Modern Physics* has influenced the course of physics through scholarly criticism and review of important topics in physics. On the occasion of the retirement of the *Reviews'* distinguished Editor, Edward U. Condon, the Council of the American Physical Society has honored Condon's 12 years of service by a reaffirmation of the value of the *Reviews* and a renewed and expanded commitment to the journal.

As physicists become more numerous and anonymous, as physics becomes more specialized and diversified, the need for scholarly reviews steadily grows. It is through the critical review of experimental literature that the quality standards of physics are established. Equally important for the continued development of physics are authoritative reviews of topics in theoretical physics. These are needed to point out the meaning, thrust, and motivation of theoretical physics, especially for experimentalists. It is through the synthesis of contemporary theoretical ideas that the intellectual structure of physics is fashioned.

The conscientious reviewer of the experimental literature, passing reasoned judgment on the scope, reliability, and significance of data in a given area of physics, does a service to expert and nonexpert alike in displaying the existing body of facts while at the same time illuminating areas where further work is desirable. The good reviewer of theory likewise benefits physics by putting into order and perspective the many aspects of the theory and explaining the physical basis and meaning of the often still-evolving theoretical framework. In essence, a worthwhile review is one which distills the valid and reliable from the erroneous and speculative in the literature. The new Editors have attempted to describe the type of material that they believe will most nearly meet these needs by adopting the Editorial Policy statement which appears on the inside back cover. We ask our readers, as well as prospective authors, to read this statement and write to the Editors to give us your views on its appropriateness.

On the basis of our experience with the preparation of this issue, we recognize three basic problems facing us. First, we must attempt to maintain the standards of quality and hence the prestige of the *Reviews*. Second, we must decide which papers among those of undoubted technical merit are appropriate for this journal. Third, we must encourage the writing of more reviews of the type described. Let us consider these problems in turn.

The maintenance of high standards requires that judgments be made not only by the Editors, who must accept the final responsibility, but also by experts on the specific topic of the paper. The appointment by the Council of five Associate Editors, each responsible for an area of physics, helps us toward this all-important goal but cannot substantially supplant the critical review of manuscripts. Thus the *Reviews* intends to continue to solicit the advice of referees (usually two or more), who are asked to judge the merits of the papers in the light of our editorial policy. Clearly we must do this even for the papers the Editors themselves solicit. In keeping with tradition in the American Physical Society, these referees give their opinions anonymously. The Editor recognizes that the use of this anonymous advice imposes a heavy obligation on him to protect the author against prejudice. But we also recognize that the unpaid and unsung referees are essential to the *Reviews*. Without them, realistic standards could not be maintained. Every reader (and many authors) owes these referees a debt of gratitude.

The second problem—choice of appropriate papers from among those submitted—poses

serious difficulties. Priority will be given to manuscripts that are reviews and are critical, comprehensive, and authoritative. We will include data compilations only when critical judgment is applied and the physics behind this judgment is explained and defended. Among theoretical papers we are frequently confronted with material of primarily pedagogical value lying between a research paper and a review. We will occasionally select from among such papers those that we believe will be of exceptional value to our readers; even then we will regret that the authors did not make the effort to convert the paper into a proper review.

Thus we confront our biggest problem. In a time when most of our colleagues express the desire to read good reviews, a diminishing fraction seems willing to devote the time and effort to write them.

There is little the American Physical Society or the Editors can do to instill in the hearts of physicists a greater appreciation for the art of criticism, or the value of synthesis of ideas and of informed and perceptive commentary about physics. Those who judge the truth in experimental results by the test of compatibility with a favorite theory, or who fail to resist the well-known, short-range attraction between experimental measurements by different investigators of the same quantity will probably continue to do so, undeterred by our efforts. But we believe that the *Reviews of Modern Physics* can at least attempt to remove the obstacles in the path of those who are dedicated to the highest standards of quality, who are willing to be both critical and fair, and who are willing to contribute to the strengthening of physics through the authorship of reviews.

To this end the *Reviews* will continue to impose no page charges on authors. To ensure the widest possible dissemination of the authors' work, and especially its continued availability to students, the subscription rate will continue to be subsidized by the Society and student members of the Society may elect to receive it free for the first three years. In addition, the *Reviews* will initiate on an experimental basis a policy of allotting the authors of each published paper, whether solicited by the Editors or not, a modest honorarium. The effective date and further details will be available on request.

The Editors will attempt to identify subjects that are appropriate for review and solicit qualified authors to undertake the work. We would also like to receive the suggestions of our readers, concerning both topics and authors. These suggestions may be sent to the Editor or to the appropriate Associate Editor.

Edward U. Condon, the Council of the American Physical Society and its Committee on Publications, and the Ad Hoc Committee on the *Reviews of Modern Physics* have provided vital support to the efforts of the new Editors. But the continued success of the *Reviews* rests ultimately on the physics community itself, whose concern for scholarship will be reflected in the manuscripts, suggestions, and criticism we receive.

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