Meetings

Midwest Theory Conference

A REGIONAL conference on theoretical physics was held March 9–10 at the State University of Iowa in Iowa City. Approximately 60 theoreticians participated, representing over 20 midwest universities, Argonne, Los Alamos, and the Armour Research Foundation. The initiative for this conference grew out of the encouraging success enjoyed by several regional midwest meetings in past years on a smaller scale; the last one was held a year ago at the University of Kansas under the direction of M. Dresden.

The conference was organized by a local committee, whose chairman, J. M. Jauch, indicated the spirit of the two-day session: Emphasis on unlimited discussion and on ample opportunity for private exchange of ideas. There was no enforced time limit on the presentation of papers. A total of 17 papers was given, more than half of them dealing with field theory and elementary particles. Hardly more than the topics of the various speakers can be indicated here.

M. Goldberger reported on the recent work of the Chicago group dealing with the difficulties of deriving a dispersion relation with finite momentum transfer for meson scattering processes. The successful application of this relation to the experimental determination of the renormalized coupling constant from meson-nucleon scattering was presented in one of the most interesting talks of the meetings by G. F. Chew. A different approach to pion-nucleon scattering was outlined by K. Tanaka. An attempt was described by S. N. Gupta to compute the high-energy interaction of photons with real (non-Dirac) nucleons. G. Wentzel showed that θ and τ meson decay processes seem to give experimental evidence for the selection rule $|\Delta I| \leq \frac{1}{2}$ in addition to the well established $|\Delta I_z| \leq \frac{1}{2}$. The Bethe-Salpeter equation was discussed by Z. V. Chraplyvy. He showed that the ladder approximation leads to a non-Hermitian two-body interaction.

Quantum field theory in general was the topic of F. J. Belinfante who gave a survey of problems related to special and general relativistic invariance. Scattering in field theory was discussed by H. Eckstein, whereas M. Dresden gave a critical survey of the applications of distribution theory to quantum electrodynamics. In a postdeadline paper S. Epstein gave a new derivation of the Low equation.

However, field theory was by no means the only topic of discussion. There were papers on the interac-

tion of macromolecules (H. Jehle), on the thermodynamics of the Overhauser effect (W. A. Barker), and on condensation theory (A. Siegert). And there was considerable discussion on nuclear physics. Thus, G. Tauber described applications of the Hartree-Fock ideas to a self-consistent particle model of the nucleus, and F. Coester showed that the discrepancy between theoretical and experimental nuclear moments of inertia can be resolved by producing a one-parameter family of theoretical moments. A method for the solution of the quantum mechanical problem of many particle scattering with its important nuclear applications was discussed by K. M. Watson. Interestingly enough, this method lends itself to applications in statistical mechanics, as was explained by W. B. Riesenfeld.

This very wide range of topics shows clearly that such conferences involve little danger of creating narrow and over-departmentalized specialists. It suggests further that the meetings of the American Physical Society, in which all branches of the huge area of physics are under discussion simultaneously, and which have grown unreasonably large in recent years, have in fact outgrown their original usefulness. Whatever the case may be, this first venture of a theoretical midwest conference on a full scale seems to have been a success, and there was some talk of making it an annual affair either in Iowa City or at some other midwest university.

The local committee is preparing proceedings of this conference in the form of summaries of the talks given. These proceedings will be distributed to the participants and can be obtained by others upon request from our physics department.

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Neutron Diffraction

IN celebration of the tenth anniversary of the start of neutron diffraction research, the American Crystallographic Association is arranging a special symposium of invited lectures on neutron diffraction topics at its summer meeting to be held June 11–15 at French Lick, Indiana. These lectures will be of the review type and will summarize the various applications to which this technique has been directed. For further information, contact the program chairman, Dr. C. G. Shull, Department of Physics, Brookhaven National Laboratory, Upton, L. I., N. Y.

Speech Communication

UNDER the joint sponsorship of the Acoustical Society of America, the Air Force Cambridge Research Center, and interested departments and laboratories of the Massachusetts Institute of Technology, a four-day Seminar (June 11–14) and a two-day Conference (June 15–16) on problems of speech communication will be offered at MIT in Cambridge, Mass. These events are scheduled in addition to sessions devoted to speech problems during the joint meeting of the Acous-