

Prof. N. F. Ramsey of Harvard offered some insight into the split-cavity method for obtaining narrow lines in atomic beam experiments. Techniques for frequency measurements and frequency control instrumentation were discussed by Dr. M. Peter of MIT and by Mr. J. H. Shoaf of the National Bureau of Standards.

Just how will the advent of dependable atomic frequency standards affect our systems of timekeeping? Dr. W. Markowitz of the US Naval Observatory outlined the method by which the crystal-resonator clocks are now calibrated against the motion of the moon in relation to the stars. Such comparisons have already shown important irregularities in the rotation of the earth. The atomic clocks should bring more light to bear on this and other astronomical matters. After a very careful calibration of some convenient atomic frequency, such as Dr. Essen is performing with the cesium resonance, we will probably shift to an atomic time standard, at least for some purposes. There also remains the very interesting question relating to how the various time scales may differ from each other. Newtonian time, which depends on gravity and inertia, is measured by astronomy and the pendulum. Coulomb time involves electric interactions and might be determined by the frequency of crystals and some molecular transitions. In addition, frequencies such as the cesium resonance, which involve a nuclear magnetic moment, might be considered to define a nuclear time since they depend upon nucleon interactions. Will it be possible to measure relative deviations among these time scales? Time (?) will tell.

H. H. Plotkin
F. H. Reder

Signal Corps Engineering Laboratories
Fort Monmouth, New Jersey

International Acoustical Congress

THE second International Congress on Acoustics is to be held June 17-23 in Cambridge, Massachusetts, in conjunction with the 51st meeting of the Acoustical Society of America. The first Congress was held three years ago in Delft. Sessions will be held both at Harvard University and at the Massachusetts Institute of Technology, and it is anticipated that the attendance will break all previous records for a gathering of specialists in acoustical science. The program is organized around three major symposia (on bioacoustics and noise control, architectural and musical acoustics, and physical acoustics and sonics) and will include some twenty-seven additional sessions of contributed papers that will deal with a variety of topics in modern acoustics, ranging from speech analysis and synthesis to jet aircraft noise. International standards for acoustics will be considered at a round-table discussion during the afternoon of June 21st.

More than one hundred scientists from abroad will attend the meeting, including representatives from Argentina, Belgium, Canada, Denmark, England, France, Germany, Hungary, India, Italy, Japan, The Netherlands, Norway, Russia, the Saar, Sweden, and Turkey.

The Congress will open with a reception on Sunday evening, June 17th, and a convocation Monday morning. A banquet is to take place on Friday evening, June 22nd. An exhibit of acoustical materials and instrumentation will be an event of interest.

The Congress has been organized by a planning committee headed by Richard H. Bolt, director of the MIT Acoustics Laboratory. John A. Kessler, also of the Laboratory, is Congress secretary. Local committees of the Acoustical Society are handling arrangements for the meeting. They include representatives of both host institutions (Harvard and MIT) and of other scientific and industrial organizations in New England. The technical program committee for the Congress is headed by Frederick V. Hunt of Harvard.

APS West Coast Summer Meeting

A PROGRAM of fifty-nine contributed papers and sixteen invited papers has been arranged for the American Physical Society's 1956 Pacific Coast summer meeting, to be held June 21-23 in the Science Building of the University of Oregon in Eugene. The program, which has been compressed into seven longer than normal sessions in order to avoid the need for parallel meetings, has been organized under the following topic headings: electron physics and spectroscopy; nuclear structure; neutron and reactor physics; sound and general physics; high-energy physics; nuclear energy levels; and solid-state physics. The banquet of the Society (preceded by a cocktail hour in the Colonnade Room of the Eugene Hotel) will be held on Friday evening, June 22, in the Erb Memorial Union on the University of Oregon campus. The principal speaker will be Professor A. C. Helmholz on "The Responsibility of Physicists as Educators". Since banquet tickets will not be sold after 1 p.m. on Thursday, June 21, those who expect to arrive in Eugene after that hour are urged to order their tickets in advance by sending \$2.50 per person to Dr. B. Crasemann, Physics Department, University of Oregon, Eugene, Oregon.

High-Temperature Techniques

A THREE-DAY symposium on the methods, materials, and processes involved in the uses of high temperature in science and industry is to take place June 25-27 on the Berkeley campus of the University of California. Sponsored jointly by Stanford Research Institute and the University of California, the symposium program will include panel discussions devoted to the following topics: methods of reaching high temperatures; materials for containing high temperatures; and processes occurring at high temperatures. Theodore von Karman, chairman of NATO's Advisory Group for Aeronautical Research and Development, will deliver the keynote address at a luncheon to be held on June 26th. The program for the symposium has been organized with the cooperation of the Air Office of Scientific Research of the US Air Research and Development

ENGINEERS • PHYSICISTS

Are you like the graduate engineer whose first job in industry failed to offer the opportunities and challenges he wanted?

Happily he learned of the unusual opportunities at the fast-growing Westinghouse Electronic Tube Division in Elmira, N. Y. He made the change to Westinghouse and was glad he did! For here he has found the challenge, and the reward of recognition for achievement. His family is happier, living in our clean, progressive, upstate community of good homes, schools and churches. Why not investigate your chances for new happiness at Westinghouse?



this
could be
YOU!

There are interesting challenges in:—

TUBE DESIGN & DEVELOPMENT

MICROWAVE TUBES: Magnetrons, traveling wave tubes, klystrons, reference cavities, and other devices

PICKUP DEVICES: Image orthicon, vidicon, infra-red, X-ray image intensifier.

POWER TUBES: High power, neutron counter, or gas tubes.

CATHODE RAY TUBES: Color and black-and-white.

OTHER TUBES: Including receiving and power tubes.

THERMIONIC EMISSION ENGINEERING

In each of the aforementioned fields.

APPLICATION ENGINEERING

In each of the aforementioned fields.

MANUFACTURING ENGINEERING

Microwave, image orthicon, receiving or color TV tubes.

QUALITY CONTROL ENGINEERING

For process capability studies and process control.

ONLY YOU!
CAN MAKE THIS
IMPORTANT
DECISION

Write
Now!

Phone R. M. Jarrett collect, or send resumé to Dept. P18

Westinghouse®

ELECTRONIC TUBE DIVISION • ELMIRA, NEW YORK



POSITION OPEN

RESEARCH PHYSICIST

Research Department of progressive organization requires physicist (B.S. degree) with knowledge of optics and electronics to assist in design and development of instruments and equipment for use in pulp and paper industry. Age 25 to 35 preferred.

Good salary, working facilities, and company benefits. Location in mountain recreation area of Western Maryland.

For more detailed information send complete resume of education and experience to:

Research Director

WEST VIRGINIA PULP & PAPER CO.

Luke, Md.

All replies will be held confidential.

NEW PHYSICS JOURNAL . . . SOVIET PHYSICS—JETP

Complete English translation of all articles appearing in Russian Journal of Experimental and Theoretical Physics. Published bimonthly by

AMERICAN INSTITUTE OF PHYSICS

57 East 55 Street, New York 22, N.Y.

\$30.00 per year U.S. and Canada \$32.00 Elsewhere

now available . . . METAL SINGLE CRYSTALS

by

**ALLOYD RESEARCH
CORPORATION**

Al	Ag	Fe	Mg
Bi	Ge	Zn	Ni
Cu	Au	Pb	α Brass

Fe-Ni Alloys

others on request

▶ METALLURGICAL RESEARCH FACILITIES

X-Ray Orientation and Crystal cutting services are available.

• for additional information write to | **ALLOYD RESEARCH CORPORATION**
570 Pleasant Street
Watertown, Massachusetts



"Research for Industry"

■ **ENGINEERS**
 ■ **MATHEMATICIANS**
 ■ **CHEMISTS**
 ■ **METALLURGISTS**
 ■ **PHYSICISTS**

*Battelle's New Atomic Energy Facilities are
 Creating Unusual Opportunities in Your Field*

BATTELLE
 MEMORIAL 505 King Ave., Columbus 1 Ohio
 INSTITUTE

RUSSEL S. DRUM, ATOMIC ENERGY CENTER

POSITIONS OPEN

SOUTHWEST RESEARCH INSTITUTE NEEDS PHYSICISTS AND CHEMISTS

Senior and Junior personnel to perform research in such basic fields as electron- and nuclear-paramagnetic resonance, vapor-phase chromatography, neutron activation analysis, radiation sterilization and similar fields, for the development of fundamental techniques and instrumentation for specific applications in the general field of chemical physics, including non-destructive testing for quality and process control for industries.

Write:

S. J. KEANE
 MANAGER OF TECHNICAL SERVICES
 P. O. BOX 2296
 SAN ANTONIO 6, TEXAS

POSITION OPEN

PHYSICS INSTRUCTOR

Growing, fully accredited western college will appoint additional physics instructor for September, 1956. Initial assignment teaching general physics, mainly to engineering sophomores. Teaching load allows time for own research or for developing upper division courses. Good starting salary, exceptional opportunity for advancement for able young man with interest in engineering physics. Send resume of qualifications to Box 656, Physics Today, 57 East 55 St., N. Y. 22, N. Y.

SITUATION WANTED

Physicist, Ph.D., Assist. Prof., experience in Nuclear Magnetic/Quadrupole and Paramagnetic Resonance, associated microwave electronics and solid state physics desires summer employment, consulting, industrial or any other unclassified work. Box 656D, Physics Today, 57 East 55 Street, New York 22, N. Y.

Command, the Office of Naval Research, and the National Science Foundation. Requests for additional information should be addressed to Dr. Nevin K. Hiester, manager, Chemical Engineering Section, Stanford Research Institute, Menlo Park, Calif.

Applied Mathematics

THE Mathematics Division of the American Society for Engineering Education meets June 25-29 at the Iowa State College (Ames). The program includes conferences with the Iowa Section of the Mathematical Association of America and with other ASEE divisions, and deals with teaching and research, trends in applied mathematics, graphical techniques, and operations research. For further details contact Dr. Haim Reingold, Department of Mathematics, Illinois Institute of Technology, Chicago 16, Ill.

Cybernetics

AN International Congress on Cybernetics will be held June 26-29 in Namur, Belgium, under the patronage of the Ministry of Education of Belgium and the United Nations Educational, Scientific, and Cultural Organization. The congress will be presided over by Georges R. Boulanger of the Polytechnic Faculty of Mons and of Brussels University. Its agenda will include sections on (1) principles and methods of cybernetics, (2) semantic machines, (3) automation and its technical, economic, and social aspects, and (4) the impact of cybernetics on the life sciences. The section on principles and methods will cover information theory, servo systems, learning, goal-seeking, operations research, the theory of games, etc. The second section will be on computing machines of various kinds, including translating devices.

The aim of the Namur congress is "to bring into clear relief the realizations already attributable to this new science which, while still at the stage of taking its bearings, is already transforming industry very profoundly and is bound to affect all sectors of human activity". The proceedings of the congress will be published. Official languages are English and French. For further information, write to Congrès International de Cybernétique, Secrétariat, 13, rue Basse-Marcelle, Namur, Belgium.

CYBERNETICS and automatic calculation are also to be the theme of another European congress currently being planned by the Spanish Cybernetic Association, together with other interested Spanish organizations, which is to be held at some still indefinite time in the near future. Those wishing to learn more of the plans for the Spanish congress when such information becomes available are invited to write to: Sociedad Española de Cibernética, calle Conde de Peñalver, 19, Madrid, Spain.