

Historic accelerators in show at Smithsonian

A new exhibit, "Atom Smashers: Fifty Years," opened on 1 December at the Smithsonian Institution's Museum of History and Technology in Washington, D.C. The exhibit, which will continue for several years, examines the historical development of high-energy particle accelerators from the earliest proposals to the most current developments.

Among the largest and most fully reconstructed machines in the exhibit are the first Van de Graaff accelerator built in 1933 at the Carnegie Institution of Washington and the 330-MeV electron synchrotron built by Edwin McMillan and his colleagues at Berkeley during 1945-49. Also, the last in a series of vacuum chambers used in the 27-inch-diameter cyclotron developed by Ernest O. Lawrence is displayed within a reconstruction of the Radiation Laboratory at Berkeley, along with log books and notebooks from 1930 and 1936 recording first demonstrations of cyclotron acceleration and the operation of the 27-inch cyclotron.

Many of the more modern accelerators are of course much too large to show in a single museum hall. The exhibit does display, however, sections of several historical machines, such as the first proton linear accelerator built at Berkeley in 1947, the electron linear accelerators built at Stanford University in 1947 and 1949 and the 2-mile-long Stanford linear accelerator built in 1961-66. The exhibit

also includes a "C"-shaped section of the magnet of Brookhaven's Cosmotron (the first proton synchrotron, built in 1952) and a reconstruction of a 35-foot section (complete with magnets, pumps, pipes and cables) of the four-mile-long circular tunnel of the 500-GeV synchrotron completed in 1972 at the Fermi National Accelerator Laboratory.

The development of the instrumentation of these machines is also traced from the earliest particle detectors, such as ionization chambers and Geiger-Müller counters, to recent developments, such as spark chambers and multiwire proportional chambers. The development of the bubble chamber in particular is outlined.

"Atom Smashers" contains a greater amount of labelling than most of the museum's exhibits; this allows the visitor to penetrate deeper into the history and the technique of the subject, according to Paul Forman, curator of modern physics at the museum and the organizer of the exhibit. The layman's understanding of the purpose and operation of the particle accelerators is also assisted by a ten-minute slide show, as well as by the display of many historic photographs and manuscripts loaned to the museum.

—CBW

AIP sets copyright and copying-fee policies

On 1 January the new US copyright law went into effect. The Governing Board of the American Institute of Physics, in

order to maintain the broadest dissemination of physics under the new law, recently established a series of new publishing policies and procedures. Included in the AIP policy are provisions for copyright transfer from authors to AIP, participation in the Copyright Clearance Center, establishment of fees for permission to copy articles and the granting of special rights to abstracting and indexing services. (See Editorial by J. A. Krumhansl, "Contribute Your Copyright," September 1977, page 104 for details.)

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Most AIP Member Societies have adopted similar policies and procedures for their own journals and publications. The exact provisions established by each Member Society may be found in their respective journals. The American Physical Society, however, has established a "no copying fee" policy that embraces industrial, education and governmental organizations except when copies are made for resale purposes (see page 67).

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The 27-inch cyclotron. This historic accelerator, built by Ernest O. Lawrence and his associates in the 1930's, is featured in the recently opened Smithsonian "Atom Smashers: Fifty Years" exhibit. It is set up with the last vacuum chamber installed and a simulation of the 74-ton magnet yoke in a reconstruction of the Berkeley Radiation Laboratory. (Photo: Fermilab.)